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Contemporary ECONOMICS

William A. McEachern

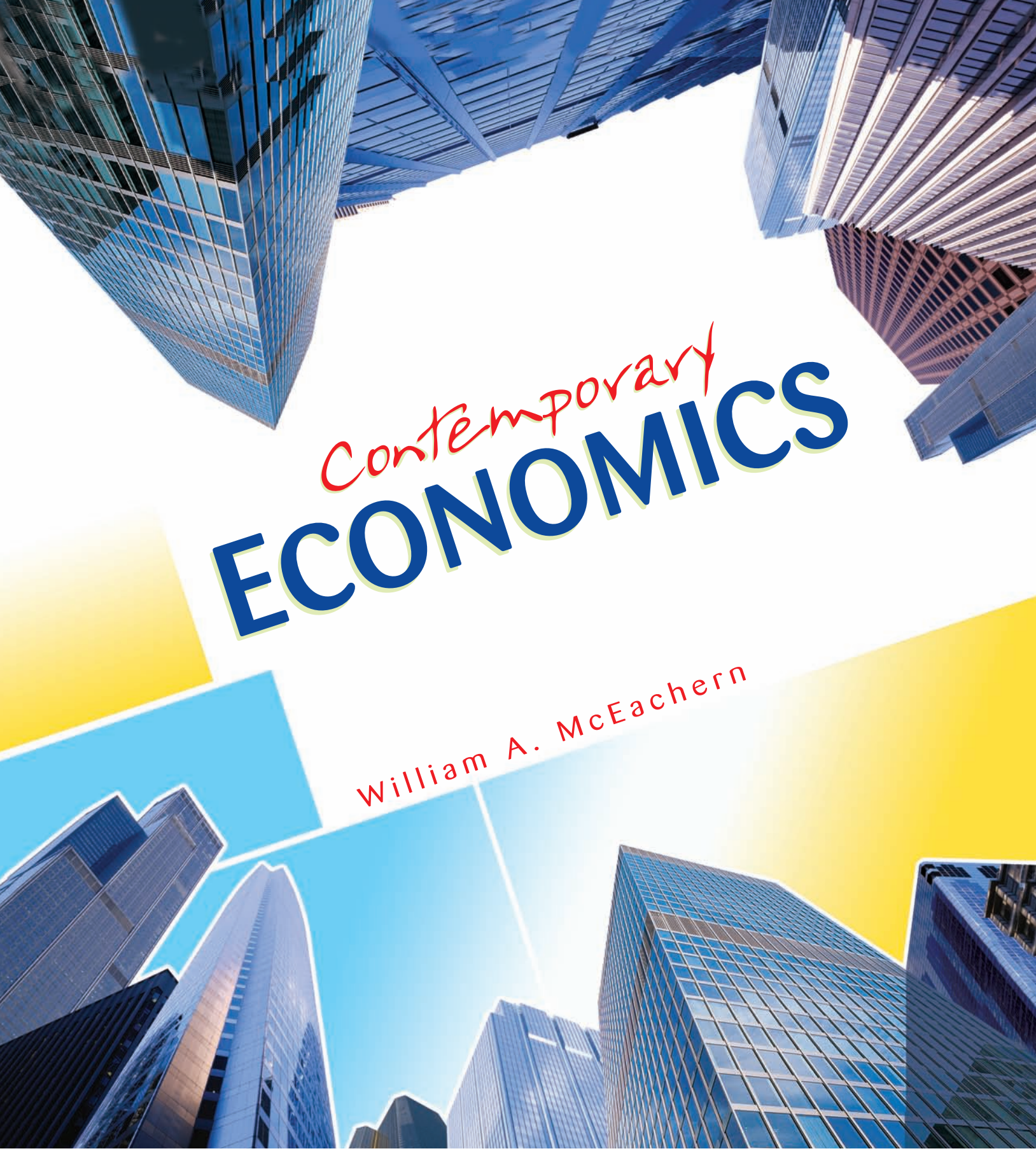


2nd EDITION

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William A. McEachern

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From the Author

Hello Colleagues

Because there can be no real learning without student interest, my first priority in writing *Contemporary Economics* is to generate interest. How do I know what interests students? Decades of experience in the classroom have helped me figure out what works and what doesn't.

My approach in *Contemporary Economics* is to remind students how much they already know since they make economic decisions every day. Never has there been a better time to learn economic principles. As the world grows more competitive, your students need the market advantage that economic insight provides.

I use timely, relevant examples to stimulate student interest. My examples build bridges from what students know to what they need to learn—moving from the familiar to the new. Examples should be self-explanatory, conveying their meaning quickly and directly. Having to explain an example is like having to explain a joke. The point gets lost.

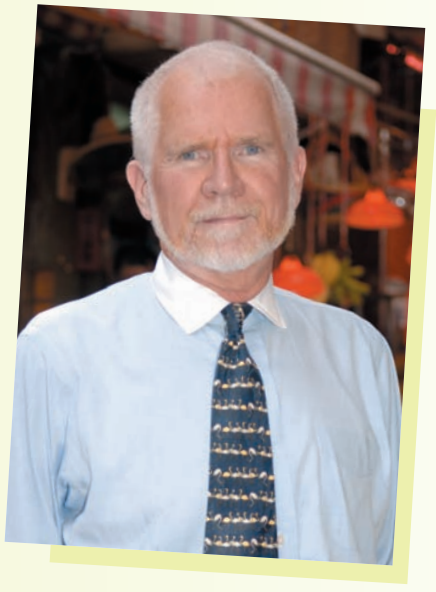
Interest also flows from variety—variety in the way material is presented. My explanations of economic theory, economic events, and economic institutions include not only examples but also anecdotes, analogies, parables, case studies, facts, statistics, photographs, web links, questions, graphs, tables, exercises, and other vehicles that keep the presentation fresh and lively.

I show students how economic theory helps them understand a changing world. But the intuition behind the theory is introduced as something familiar, often reflected by common expressions. For example, the idea of diminishing marginal utility is captured by the expression "Been there. Done that."

Nor am I afraid to use graphs, but I use them judiciously. A graph should make things clearer, not become an obstacle to teaching and learning. Some textbooks use graphs *the way a drunk uses a lamppost*—more for support than for illumination.

I believe I can help you help your students learn more economics. I am new enough to the task to keep it fresh but experienced enough to get it right.

Will McEachern



About the Author

William McEachern was born in Portsmouth, NH, earned an undergraduate degree in the honors program from College of the Holy Cross, served three years as an Army officer, and earned an M.A. and a Ph.D. in economics from the University of Virginia. He began teaching economic principles at the University of Connecticut in 1973. In 1980 he started offering teaching workshops around the country and, in 1990, created *The Teaching Economist*, a newsletter that focuses on making teaching more effective and more fun.

Professor McEachern has advised federal, state, and local governments on policy matters and his writings have appeared in media such as the *New York Times, London Times, Wall Street Journal, Christian Science Monitor, Boston Globe, USA Today,* CBS MarketWatch.com, Voice of America, *Now with Bill Moyers,* and *Reader's Digest.*

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Contents





National Content Standards in Economics, xxiv
Reading Skills, xxvi

UNIT 1 INTRODUCTION TO ECONOMICS, 2

CHAPTER 1 What Is Economics?, 4

1.1 The Economic Problem, 5
1.2 Economic Theory, 10
1.3 Opportunity Cost and Choice, 19
Chapter Assessment, 28

CHAPTER 2 Economic Systems and Economic Tools, 32

2.1 Economic Questions and Economic Systems, 33
2.2 Production Possibilities Frontier, 41
2.3 Comparative Advantage, 50
Chapter Assessment, 56

CHAPTER 3 U.S. Private and Public Sectors, 60

3.1 The U.S. Private Sector, 61
3.2 Regulating the Private Sector, 68
3.3 Public Goods and Externalities, 75
3.4 Providing a Safety Net, 82
Chapter Assessment, 90

UNIT 2 THE MARKET ECONOMY, 96

CHAPTER 4 Demand, 98

4.1 The Demand Curve, 99
4.2 Elasticity of Demand, 107
4.3 Changes in Demand, 116
Chapter Assessment, 124



CHAPTER 5 **Supply, 128**

5.1 The Supply Curve, 129
5.2 Shifts of the Supply Curve, 138
5.3 Production and Cost, 145
Chapter Assessment, 156

CHAPTER 6 **Market Forces, 160**

6.1 Price, Quantity, and Market Equilibrium, 161
6.2 Shifts of Demand and Supply Curves, 167
6.3 Market Efficiency and Gains from Exchange, 176
Chapter Assessment, 184

CHAPTER 7 **Market Structure, 188**

7.1 Perfect Competition and Monopoly, 189
7.2 Monopolistic Competition and Oligopoly, 199
7.3 Antitrust, Economic Regulation, and Competition, 206
Chapter Assessment, 214

UNIT 3 MARKET INSTITUTIONS, 218

CHAPTER 8 **Businesses, 220**

8.1 Entrepreneurs, 221
8.2 Sole Proprietorships and Partnerships, 229
8.3 Corporations and Other Organizations, 237
Chapter Assessment, 246

CHAPTER 9 **Labor Markets, 250**

9.1 Demand and Supply of Resources, 251
9.2 Wage Determination, 262
9.3 Labor Unions, 269
Chapter Assessment, 278





CHAPTER 10 **Financial Markets and Business Growth, 282**

10.1 Production, Consumption, and Time, 283
10.2 Banks, Interest, and Corporate Finance, 290
10.3 Business Growth, 299
Chapter Assessment, 308

UNIT 4 | THE NATIONAL ECONOMY, 312

CHAPTER 11 **Economic Performance, 314**

11.1 Estimating Gross Domestic Product (GDP), 315
11.2 Limitations of GDP Estimation, 322
11.3 Business Cycles, 329
11.4 Aggregate Demand and Aggregate Supply, 337
Chapter Assessment, 346

CHAPTER 12 **Economic Growth, 350**

12.1 The PPF, Economic Growth, and Productivity, 351
12.2 Living Standards and Labor Productivity Growth, 360
12.3 Issues of Technological Change, 368
Chapter Assessment, 376

CHAPTER 13 **Economic Challenges, 380**

13.1 Unemployment, 381
13.2 Inflation, 391
13.3 Economic Instability, 397
13.4 Poverty, 406
Chapter Assessment, 414

UNIT 5 | PUBLIC POLICY AND THE NATIONAL ECONOMY, 418

CHAPTER 14 **Government Spending, Revenue, and Public Choice, 420**

14.1 Public Goods and Taxation, 421
14.2 Federal, State, and Local Budgets, 429
14.3 Economics of Public Choice, 439
Chapter Assessment, 446

CHAPTER 15 **Fiscal Policy, Deficits, and Debt, 450**

15.1 The Evolution of Fiscal Policy, 451
15.2 Fiscal Policy Reconsidered, 460
15.3 Federal Deficits and Federal Debt, 467
Chapter Assessment, 476

CHAPTER 16 **Money and Banking, 480**

16.1 Origins of Money, 481
16.2 Origins of Banking and the Federal Reserve System, 488
16.3 Money, Near Money, and Credit Cards, 497
Chapter Assessment, 506

CHAPTER 17 **Money Creation, the Federal Reserve System, and Monetary Policy, 510**

17.1 How Banks Work, 511
17.2 Monetary Policy in the Short Run, 517
17.3 Monetary Policy in the Long Run, 528
Chapter Assessment, 536



UNIT 6 | THE INTERNATIONAL ECONOMY, 540

CHAPTER 18 **International Trade and Finance, 542**

18.1 Benefits of Trade, 543
18.2 Trade Restrictions and Free-Trade Agreements, 549
18.3 Balance of Payments, 557
18.4 Foreign Exchange Rates, 564
Chapter Assessment, 572

CHAPTER 19 **Economic Development, 576**

19.1 Developing Economies and Industrial Market Economies, 577
19.2 Foreign Trade, Foreign Aid, and Economic Development, 587
19.3 Rules of the Game, Transition Economies, and Convergence, 593
Chapter Assessment, 602





UNIT 7 | PERSONAL FINANCIAL LITERACY, 606

CHAPTER 20 Consumer Responsibilities and Protections, 608

20.1 Consumer Choice, 609
20.2 Using Credit Responsibly, 617
20.3 Consumer Protection, 627
Chapter Assessment, 636

CHAPTER 21 Managing Your Money, 640

21.1 Saving, 641
21.2 Investing, 650
21.3 Insurance, 660
Chapter Assessment, 666

Economic Data, 670
Glossary, 680
Spanish Glossary, 693
Index, 708

Features

Ask the Xpert!

Why are economists always talking about money and wealth?, 6

Have computers affected worker productivity?, 46

Will there always be poverty?, 83

Why do consumers buy less of an item when its price rises?, 101

Why can't we feed the world from a flower pot?, 146

Why do some prices adjust more slowly?, 163

Why are cable rates so high?, 195

What are the major differences among the four market structures?, 203

How do businesses raise cash to finance startups and expansions?, 223

What would happen if everyone were paid the same?, 263

Why are some rates of interest so much higher than others?, 285

Gross Domestic Product increased between 1973 and 1974, but they say we had a recession. How could this be?, 331

Have computers affected worker productivity?, 365

Does technological change destroy jobs and lead to unemployment?, 370

What are the principal types of unemployment?, 382

Which is worse: demand-pull inflation or cost-push inflation?, 393

What is the meaning of public goods?, 422

Why do we keep the income tax if it is so unpopular?, 431

In theory, how does a tax cut work to stimulate the economy?, 461

What is fiscal policy, and what is it supposed to accomplish?, 470

What are the functions of money?, 483

Why should we care how fast the money supply grows?, 521

What are some arguments for restricting trade with other nations?, 550

Why are some nations rich but others are poor?, 578

What's the best thing you can do to increase your value as a worker?, 611

How are banks different from other businesses?, 643

CONNECT TO HISTORY

Glassmaking in Jamestown, 27

Jamestown and the English Mercantile System, 55

The Commerce Clause, 91

The Industrial Revolution in England: The Demand for Cotton, 123

The Industrial Revolution in England: The Supply of Cotton, 155

The Rocky Mountain Fur Company, 183

The North American Fur Trade, 213

Andrew Carnegie—Entrepreneur and Philanthropist, 245

Labor Unions, 277

United States Steel, 307

The Panic of 1907, 345

Interchangeable Parts and the Assembly Line, 375

The New Deal and the Deficit, 405

The Evolution of the Income Tax, 438

Alexander Hamilton and the Question of the National Debt, 475

Early Banking in the United States, 496

Deflation in the Nineteenth Century, 535

Tariffs and Trade, Part I, 571

Tariffs and Trade, Part II, 601

Credit Cards, 635

Patriotism and Savings Bonds, 649

e-conomics

The Rational Choice Is to Stay Home from Work, 11

A Growing Web, 44

Electronic Health Care Records: Safety Versus Privacy, 69

A Girl's Best Friend, 119

iPod Explosion Spreads, 142

The Ultimate Marketplace, 164

Microsoft on Trial, 209

Software for Business Startups, 235

Unionizing IT, 276

Identity Theft, 292

Computer Prices and GDP Estimation, 326

Computers and Productivity Growth, 366

Layers of the Onion Reveal How to Succeed with an Online Business, 403

Library Internet Access for Some but Not All?, 424

Hackers vs. Hacker Attackers, 464

An Octopus With Many Tentacles, 491

From Big Rigs to Wally World—Specialty Banks Rise Again, 515

U.S. Foreign Aid Accountability, 561

Technology Outsourcing to Developing Countries, 582

Online Degrees Gaining Credibility, 610

A Fool and His Money Are Soon Parted, 645

ETHICS IN ACTION

Can Business Decisions Be Ethical?, 21

Stealing Digital Property, 39

Environmental Quality and America's Oil Supply, 79

Inappropriate Response to Demand Can Have Tragic and Wasteful Effects, 104

Workers' Compensation, 153

Face the Music, 172

Price-Control Program Challenged, 196

Fulfilling Corporate Responsibility, 241

Women Trail Men, 266

Predatory Lending, 288

A New, Improved CPI, 342

Training Foreign Workers to Take Your Job, 355

Profits to Oil Companies: $8 Million an Hour, 394

Minors Banned from Making Political Contributions, 441

Preventing Deficits from Harming Future Generations, 473

Crime at the ATM: Who's Responsible?, 486

A Trillion Dollar Bank, 523

Should Lax Environmental Laws Create a Comparative Advantage?, 545

Corruption Hinders Production and Trade, 596

Manipulating Your Credit Score, 623

Auto Insurance Fraud Hits Home, 662

In the News

Rich or Poor, It's Good to Have Money, 5

How Now Dow?, 10

Cost of Success for Female Attorneys, 19

The Socialist Market Economy, 33

Paying at the Pump for Supply Interruptions, 41

Live Longer with Specialized Care, 50

Spending Is More Equal Than Income, 61

How Private Is Your Property?, 68

Dams, Locks, and Tradeoffs on the Ohio, 75

Good News/Bad News for U.S. Kids, 82

Demand Rising for Digital HDTV, 99

Gas Prices Painful for Consumers, 107

Technology Changes TV Viewing Habits, 116

Toys and Games Are Not Fun and Games for Suppliers, 129

Gasoline's Long Supply Chain, 138

At the Local Megaplex, 145

Market Forces Lead Oil Companies to Unconventional Sources, 161

The Mystery of Air Fares, Part I, 167

The Mystery of Air Fares, Part II, 176

Is a Diamond Forever?, 189

Foreign Automakers Challenge the "Big Three" Oligopoly, 199

Foot-Tingling Deregulation, 206

African Americans Choose Entrepreneurship, 221

Owning a Piece of the Reds, 229

Open Season on CEOs, 237

Productivity in the U.S. Service Sector, 251

Winner-Take-All Labor Markets, 262

Unionization in a Global, Competitive Environment, 269

Banking on a Recovery After Katrina, 283

Banks Profit More from Internet Customers, 290

From Burger Stand to Burger King, 299

GDP Growth Estimates: A Work in Progress, 315

The Yard Sale Police Are Coming, 322

Tracking a $12 Trillion Economy, 329

Measuring the "Knowledge Economy," 337

The Chinese Are Coming on Strong, 351

Standard of Living and the Poverty Threshold, 360

It's a Flat World After All, 368

Long-Term Joblessness, 381

Who's the Box Office Champion?, 391

Static Versus Dynamic Analysis of Tax Policy, 397

"Near Poor" Status Threatens Millions of Americans, 406

Income Tax Progressivity: How Much is Enough?, 421

Erasing Federal Budget Deficits Calls for Painful Choices, 429

Much Ado About Earmarks, 439

Emergency Spending, 451

Requiring a Balanced Budget, 460

The National Debt Clock, 467

The Price of Admission to the Barter, 481

Supernotes, Superfakes, 488

Traveler's Checks Go Electronic, 497

"Because That's Where the Money Is," 511

The Federal Funds Rate, 517

The Problems of Too Much or Too Little Money, 528

Comparative Advantage in a Dynamic World, 543

Tariffs on Steel Trigger Conflict Among American Industries, 549

U.S. Trade Deficit with China, 557

China Pressured to Let Yuan Find Market Exchange Rate, 564

Local Knowledge Helps Home-Grown Firms Expand into Other Developing Countries, 577

"Word Hard, Save Money," 587

Bureaucracy and Corruption Slow Exports from Developing Economies, 593

Palm Readers Aid War on Terror, 609

Credit-Card Debt May Lead to Financial Trouble, 617

FDA Overhauls Rules for Prescription Labels, 627

Savings Rate Trends Toward Dissaving, 641

The Motley Fool Spreads and Makes Investment News, 650

Identity Theft Insurance, 660



Natural Resources, 7

Comparative Advantage, 52

Community Households, 62

Changes or Trends in City Populations, 119

Current Tax Rate for Businesses, 141

Surpluses and Shortages, 162

Excess Capacity, 201

Not-for-Profit Organizations, 242

Job Tastes, 258

Banks' Interest Rates, 294

Building Permits and the Local Economy, 334

Effect of Schooling on Gross Products, 362

Local Unemployment Rates, 385

Local Government Budget, 433

Federal Budget Deficit, 472

Researching a Depository Institution, 491

Interest Rates on Savings Accounts, 519

Local Exports, 559

Local Physical Infrastructure, 594

Comparison Shopping, 614

Investment Experts, 657



Scarcity, 6

Marginal Cost/Benefit, 14

Allocation of Goods and Services, 34

Role of Government, 80

Role of Resources in Determining Income, 83, 252

Profit and Entrepreneurs, 130

Markets—Price and Quantity Determination, 172

Role of Competition, 211

Growth, 224, 353, 598

Role of Interest Rates: Market for Loans, 287

Macroeconomy—Income, Employment, Price Level, 340

Unemployment, 384

Cost/Benefit Analysis for Government Programs, 443

Role of Economic Institutions, 490

Role of Money, 518

Specialization and Trade, 546

Gain from Trade, 569



Christopher Curtis, Children's Book Author, 18

Susan Packard, President of Scripps Networks New Ventures Affiliate Sales and International Development, 55

Carlos Guiterrez, U.S. Secretary of Commerce, 74

Julie Azuma, President, Different Roads to Learning, 115

John Schnatter, Founder, Papa John's Pizza, 144

Mary Engelbreit, Artist and Entrepreneur, 166

Leonard Riggio, CEO, Barnes & Noble, 205

Roxanne Quimby, Burt's Bees, 228

Bill Belichick, Head Coach, New England Patriots, 261

Mark Melton, Melton Franchise Systems Inc., 306

Denise Austin, Fitness Expert, 336

Larry Page and Sergey Brin, Google founders, 359

Jeff Taylor, Founder, Monster.com, 390

Kathleen Sebelius, Governor of Kansas, 445

Philip Knight, Chairman of the Board and Co-Founder, NIKE, Inc., 466

Arthur A. Garcia, Director, Community Development Financial Institutions (CDFI), U.S. Department of the Treasury, 504

Ben Bernanke, Federal Reserve Chairman, 527

Nandan Nilekani, Chief Executive Officer, President, and Managing Director of Infosys Technologies, Ltd., 555

Muhammad Yunus, Founder, The Grameen Bank, 556

Howard Schultz, Chairman, Chief Global Strategist, Starbucks Corporation, 616

Meg Whitman, CEO, eBay, Inc., 659



100 Best Corporate Citizens, 7

College Choice, 24

CIA World Factbook, 37

Foreign-Assistance Programs, 46

How Barter Works in the Economy, 53

Trade Questions, 66

Patents, 70

Environmental Protection Agency, 78

Income Distribution, 83

Law of Diminishing Marginal Utility, 101

The Economics of Tobacco Policy, 113

The Economics of Consumption, 120

New Manufacturing-Related Technologies, 140

Unit Labor Costs, 149

Minimum Wage, 178

Postage Rates, 194

Airline Deregulation, 210

The Segway® Human Transporter, 223
LLPs and RUPA, 242
Occupational Outlook Handbook, 253
Federal Minimum Wage, 266
Union Membership, 271
Key Interest and Mortgage Rates, 285
Online Banking and Privacy, 292
McDonald's Franchises, 300
Estimating GDP and Its Components, 316
Inflation Calculator, 325
Business Cycle Expansions and Contractions, 331
Economic History of the Twentieth Century, 341
Productivity and Costs, 354
International Manufacturing Productivity, 373
Unemployment Rate, 383
Consumer Price Indexes, 392
National Economic Conditions, 402
Temporary Assistance for Needy Families Program, 410
Federal Budget, 431
Campaign Reform, 442
Tax and Spending Proposals, 454
Fiscal Analysis, 461
Office of Management and Budget's Guides, 468
Penny Circulation, 486
New York Federal Reserve Bank, 493
Currency, 498
Obtaining a Bank Charter, 512
Federal Open Market Committee, 523
Independent Currency Boards, 532
World Trade Organization, 552
Bureau of Economic Analysis, 558
Currency Values, 568
Global Populations and Economic Situations, 580
International Monetary Fund, 590
Investing Your Money, 611
Identity Theft, 633
Duer Panic of 1792, 652
Auto Insurance Policy, 663

Sharpen Your Skills

Understand Cause and Effect, 23, 137
Interpret a Graph, 48
Use Mathematics to Draw Conclusions, 89
Draw Conclusions, 121, 244
Analyze Visuals, 174, 585
Read Pie Graphs, 198
Working with Percentages, 260
Make Inferences, 298, 413
Evaluate Data, 343
Categorize Information, 358
Apply Math Skills, 428
Evaluate and Construct Pie Graphs, 459
Decision-Making Skills, 505
Make Predictions, 526
Critical Thinking, 556, 626

Span the Globe

A Yen for Vending Machines, 8
Child Labor, 52
China's March to a Free Economy, 65
We Ate All the Big Fish, 109
Mongolian Goats and the Price of Cashmere Sweaters, 134
Oil for One and One for Oil, 180
Flower Auction Holland, 192
Some Chinese Entrepreneurs Strike It Rich, 226
The Immigration Issue, 254
Doing the Ford Shuffle, 303
Japanese Economic Revival Plan Working, 319
Software Piracy Levels Make Real Piracy Look like Shoplifting, 372

Pro-Poor Tourism, 411

Why Japan Is Different, 436

Laissez-Faire Policies in France, 455

The U.S. Dollar: A World Currency, 498

Hyperinflation and Political Instability, 531

Proposal to Create World's Largest Free-Trade Area under Attack, 553

Cat and Mouse Games with Trade Restrictions, 591

Customs Seizures Turn Grandma and Grandpa into Crooks, 630

Stock Exchanges Proliferate, 653



How Market Participants Interact, 15

Market Economy, 38

Public Goods, 76

Law of Diminishing Marginal Utility, 103

Adjusting to a Price Change, 135

Clearance Sales, 180

Industries Competing in Market Structures, 203

Starting a General Partnership, 234

Wage Differences among Occupations, 264

Multinational Corporations, 304

Inflation Calculator, 325

Business Clusters, 373

Aggregate Supply and Aggregate Demand Graphs, 403

User Fees, 426

Economic Schools of Thought, 457

Barter Role-Play, 482

Federal Funds Rate, 524

The Top 10 Sources of Imports, 547

Import Substitution and Export Promotion, 588

Credit-Card Disclosure Information, 621

Checking Account Options, 647

Charts and Figures

Chapter 1 What Is Economics?

Figure 1.1 Circular-Flow Model for Households and Firms, 16

Chapter 2 Economic Systems and Economic Tools

Figure 2.1 Production Possibilities Frontier (PPF), 42
Figure 2.2 Shifts of the Production Possibilities Frontier, 45

Chapter 3 U.S. Private and Public Sectors

Figure 3.1 Evolution of Production, 64
Figure 3.2 U.S. Production as a Percentage of U.S. Consumption, 66
Figure 3.3 Categories of Private and Public Goods, 78
Figure 3.4 Number and Percentage of U.S. Population in Poverty: 1959–2004, 84
Figure 3.5 U.S. Poverty Rates and Types of Households, 85
Figure 3.6 Income Redistribution as a Percentage of All Federal Outlays: 1960–2007, 88

Chapter 4 Demand

Figure 4.1 Demand Schedule and Demand Curve for Pizza, 103
Figure 4.2 Market Demand for Pizzas, 105
Figure 4.3 The Demand for Pizza, 108
Figure 4.4 Demand Becomes More Elastic Over Time, 112
Figure 4.5 Selected Elasticities of Demand, 113
Figure 4.6 An Increase in the Market Demand for Pizza, 117
Figure 4.7 A Decrease in the Market Demand for Pizza, 118

Chapter 5 Supply

Figure 5.1 The Supply Schedule and Supply Curve for Pizza, 131
Figure 5.2 Summing Individual Supply Curves to Find the Market Supply Curve, 132
Figure 5.3 The Supply of Pizza, 133
Figure 5.4 Market Supply Becomes More Elastic Over Time, 135
Figure 5.5 An Increase in the Supply of Pizza, 139
Figure 5.6 A Decrease in the Supply of Pizza, 140
Figure 5.7 Short-Run Relationship Between Units of Labor and Tons of Furniture Moved, 147
Figure 5.8 The Marginal Product of Labor, 148
Figure 5.9 Short-Run Cost Data for Hercules at Your Service, 149
Figure 5.10 Marginal Cost Curve for Hercules at Your Service, 150
Figure 5.11 Supply Curve for Hercules at Your Service, 151
Figure 5.12 A Firm's Long-Run Average Cost Curve, 153

Chapter 6 Market Forces

Figure 6.1 Equilibrium in the Pizza Market, 163
Figure 6.2 Effects of an Increase in Demand, 168
Figure 6.3 Effects of a Decrease in Demand, 169
Figure 6.4 Effects of an Increase in Supply, 170
Figure 6.5 Effects of a Decrease in Supply, 171
Figure 6.6 Effects of Changes in Both Supply and Demand, 173
Figure 6.7 Effects of a Price Floor and a Price Ceiling, 179
Figure 6.8 Market Demand and Consumer Surplus, 181

Chapter 7 Market Structure

Figure 7.1 Market Structure, 190
Figure 7.2 Market Equilibrium and Firm's Demand Curve: Perfect Competition, 191
Figure 7.3 Economies of Scale as a Barrier to Entry, 193
Figure 7.4 Monopoly, Perfect Competition, and Consumer Surplus, 195
Figure 7.5 Comparison of Market Structures, 203

Chapter 8 Businesses

Figure 8.1 Source of U.S. Patents Awarded for Inventions by Year, 225
Figure 8.2 Distribution of Sole Proprietorships Based on Annual Sales and by Industry, 230
Figure 8.3 Distribution of Partnerships Based on Annual Sales and Industry, 232
Figure 8.4 Comparing Corporations with Sole Proprietorships and Partnerships, 238
Figure 8.5 Distribution of Corporations by Annual Sales and Industry, 239

Chapter 9 Labor Markets

Figure 9.1 Labor Market for Carpenters, 253
Figure 9.2 An Increase in the Demand for Carpenters, 255
Figure 9.3 An Increase in the Supply of Carpenters, 257
Figure 9.4 Average Hourly Wage by Occupation, 263
Figure 9.5 Education Pays More for Every Age Group, 264
Figure 9.6 Effect of Reducing Supply or Increasing Labor Demand, 272
Figure 9.7 Median Weekly Earnings: Union vs. Nonunion, 273
Figure 9.8 U.S. Union Membership for Men and Women by Age, 274
Figure 9.9 Right-to-Work States and Unionization Percentage per State, 275

Chapter 10 Financial Markets and Business Growth

Figure 10.1 Value of Business Structures and Equipment in the United States, 285
Figure 10.2 Role of Interest Rates: Market for Loans, 287
Figure 10.3 Interest Rates Charged for Different Types of Loans, 293
Figure 10.4 Merger Waves in the Past Century, 301

Chapter 11 Economic Performance

Figure 11.1 U.S. Spending Components as Percentages of GDP Since 1960, 317
Figure 11.2 Computation of Value Added for a New Desk, 320
Figure 11.3 Example of a Price Index (Base Year = 2006), 326
Figure 11.4 Example Market Basket Used to Develop the Consumer Price Index, 327
Figure 11.5 Business Cycles, 330
Figure 11.6 Annual Percentage Change in U.S. Real GDP Since 1929, 331
Figure 11.7 U.S. and U.K. Growth Rates in Real GDP, 332
Figure 11.8 Aggregate Demand Curve, 339
Figure 11.9 Aggregate Demand and Supply, 341
Figure 11.10 U.S. Real GDP and Price Level Since 1929, 342

Chapter 12 Economic Growth

Figure 12.1 Economic Growth Shown by Shifts Outward in the Production Possibilities Frontier, 352
Figure 12.2 Average Years of Education of Working-Age Populations in 1970 and 2002, 362
Figure 12.3 Long-Term Trend in U.S. Labor Productivity Growth: Annual Average by Decade, 363
Figure 12.4 U.S. Labor Productivity Growth, 364
Figure 12.5 U.S. Real GDP Per Capita Since 1959, 365
Figure 12.6 U.S. GDP Per Capita in 2004 as Compared to Other Major Economies, 366
Figure 12.7 Growth: R&D Spending as a Percentage of GDP for Major Economies During the 1980s and 1990s, 370

Chapter 13 Economic Challenges

Figure 13.1 Composition of Adult Population (in millions), July 2006, 385
Figure 13.2 The U.S. Unemployment Rate Since 1900, 386
Figure 13.3 Unemployment Among Various Groups Since 1972, 387
Figure 13.4 Inflation Caused by Shifts of the Aggregate Demand and Aggregate Supply Curves, 392
Figure 13.5 Consumer Price Index Since 1913, 393
Figure 13.6 The Decrease of Aggregate Demand Between 1929 and 1933, 398
Figure 13.7 Stagflation Between 1973 and 1975, 401
Figure 13.8 U.S. Poverty Rates by Family Type and Number of Workers, 407
Figure 13.9 U.S. Poverty Rates and Unemployment Rates, 408
Figure 13.10 Poverty Rates in the United States, 409

Chapter 14 Government Spending, Revenue, and Public Choice

Figure 14.1 Market Demand for a Public Good, 423
Figure 14.2 Top Marginal Tax Rate on Personal Income, 1913–2006, 426
Figure 14.3 Composition of Federal Spending Since 1960, 430
Figure 14.4 Composition of Federal Revenue Since 1960, 431
Figure 14.5 Composition of State Spending and State Revenue, 432
Figure 14.6 Composition of Local Spending and Local Revenue, 434
Figure 14.7 Government Outlays as Percentage of GDP, 435

Chapter 15 Fiscal Policy, Deficits, and Debt

Figure 15.1 Fiscal Policy and Potential Output, 452
Figure 15.2 Discretionary Fiscal Policy to Close a Contractionary Gap, 453
Figure 15.3 When Discretionary Fiscal Policy Underestimates the Natural Rate of Unemployment, 462
Figure 15.4 Federal Deficits and Surpluses as Percent of GDP Since 1934, 468
Figure 15.5 Annual Percentage Changes in Real GDP and in Real Investment Since 1960, 470
Figure 15.6 Federal Debt Held by the Public as Percent of GDP, 1940 to 2007, 471

Chapter 16 Money and Banking

Figure 16.1 The Twelve Federal Reserve Districts, 493
Figure 16.2 Organization Chart for the Federal Reserve System, 494
Figure 16.3 Alternative Measure of the Money Supply,April 2006, 501
Figure 16.4 The Evolution of Money, 502

Chapter 17 Money Creation, the Federal Reserve System, and Monetary Policy

Figure 17.1 Home Bank's Balance Sheet After $100,000 Deposit in Checking Account, 513
Figure 17.2 Demand for Money, 519
Figure 17.3 Effect of an Increase in the Money Supply, 520
Figure 17.4 Effects of a Lower Interest Rate on Real GDP and the Price Level, 521
Figure 17.5 Ups and Downs in the Federal Funds Rate Since 1996, 524
Figure 17.6 An Increase in the Money Supply in the Long Run, 529
Figure 17.7 Inflation and Money Growth Worldwide, 530

Chapter 18 International Trade and Finance

Figure 18.1 Composition of U.S. Exports and Imports in 2005, 547
Figure 18.2 U.S. Tariff Revenue as a Percentage of Merchandise Imports Since 1821, 552
Figure 18.3 U.S. Merchandise Imports and Exports Relative to GDP Since 1960, 559
Figure 18.4 U.S. Trade Deficit in 2005 by Country or Region, 570
Figure 18.5 The Foreign Exchange Market for Euros, 576
Figure 18.6 Effect on the Foreign Exchange Market of an Increase in Demand for Euros, 578

Chapter 19 Economic Development

Figure 19.1 GDP Per Capita for Selected Countries in 2005, 579
Figure 19.2 Fertility Rates for Selected Countries as of 2006, 580
Figure 19.3 Fixed and Mobile Telephone Lines Per 1,000 Population by Country in 2005, 594
Figure 19.4 Personal Computers Per 1,000 Population by Country in 2003, 599

Chapter 20 Consumer Responsibilities and Protections

Figure 20.1 One-Month Budget Worksheet for a Typical Student, 613
Figure 20.2 Percentage Distribution of Consumer Payments, 2000 and 2008, 618
Figure 20.3 Number of CPSC-Ordered Recalls in April, 2000–2006, 629

Chapter 21 Managing Your Money

Figure 21.1 Amounts Deposited in Bank Accounts, 1990–2004, 644
Figure 21.2 Percent of Families Owning Corporate Stock by Level of Income, 651
Figure 21.3 Insurance Industry Income and Expenditures, 1999–2003, 661

National Content Standards in Economics



National Council on Economic Education

Standard	Chapter Coverage in *Contemporary Economics*
1. Scarcity. Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.	Chapters 1, 2, 3, 4, 5, 8, 9, 12, 19, 20
2. Marginal Cost/Benefit. Effective decision making requires comparing the additional costs of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something: few choices are "all or nothing" decisions.	Chapters 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14, 20, 21
3. Allocation of Goods and Services. Different methods can be used to allocate goods and services. People acting individually or collectively through government must choose which methods to use to allocate different kinds of goods and services.	Chapters 1, 2, 3, 19
4. Role of Incentives. People respond predictably to positive and negative incentives.	Chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19
5. Gain from Trade. Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and usually among individuals or organizations in different nations.	Chapters 2, 3, 6, 10, 11, 16, 18, 19
6. Specialization and Trade. When individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.	Chapters 1, 2, 3, 5, 6, 7, 16, 18, 19
7. Markets–Price and Quantity Determination. Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.	Chapters 1, 2, 4, 5, 6, 7, 13, 18, 19, 20, 21
8. Role of Price in the Market System. Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.	Chapters 4, 5, 6, 9, 20, 21
9. Role of Competition. Competition among sellers lowers costs and prices, and encourages producers to produce more of what consumers are willing and able to buy. Competition among buyers increases prices and allocates goods and services to those people who are willing and able to pay the most for them.	Chapters 3, 6, 7, 8, 12
10. Role of Economic Institutions. Institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution—clearly defined and enforced property rights—is essential to a market economy.	Chapters 2, 3, 7, 8, 9, 10, 11,12, 13, 15, 16, 17, 18, 19, 20, 21

11. Role of Money. Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services.	Chapters 2, 3, 8, 10, 16, 17, 18, 20, 21
12. Role of Interest Rates. Interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, which affects the allocation of scarce resources between present and future uses.	Chapters 3, 10, 11, 13, 15, 16, 17, 20, 21
13. Role of Resources in Determining Income. Income for most people is determined by the market value of the productive resources they sell. What workers earn depends, primarily, on the market value of what they produce and how productive they are.	Chapters 1, 3, 5, 9, 11, 12, 13, 15, 19
14. Profit and the Entrepreneur. Entrepreneurs are people who take the risks of organizing productive resources to make goods and services. Profit is an important incentive that leads entrepreneurs to accept the risks of business failure.	Chapters 1, 3, 5, 8, 10, 12, 19, 21
15. Growth. Investment in factories, machinery, new technology, and in the health, education, and training of people can raise future standards of living.	Chapters 1, 2, 3, 8, 9, 10, 11, 12, 13, 15, 17, 19, 21
16. Role of Government. There is an economic role for government in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also redistribute income.	Chapters 2, 3, 6, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20
17. Using Cost/Benefit Analysis to Evaluate Government Programs. Costs of government policies sometimes exceed benefits. This may occur because of incentives facing voters, government officials, and government employees; because of actions by special interest groups that can impose costs on the general public; or because social goals other than economic efficiency are being pursued.	Chapters 3, 7, 13, 14, 18, 19
18. Macroeconomy—Income, Employment, Prices. A nation's overall levels of income, employment, and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies, and others in the economy.	Chapters 1, 11, 13, 15, 19
19. Unemployment and Inflation. Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.	Chapters 11, 13, 15, 17, 19, 21
20. Monetary and Fiscal Policy. Federal government budgetary policy and the Federal Reserve System's monetary policy influence the overall levels of employment, output, and prices.	Chapters 3, 13, 14, 15, 16, 17, 18

Reading Skills

Your textbook is a guide to help you learn new information, but you cannot retain that information without reading the text effectively. The following reading skills strategies can help you get the most out of your reading.

BEFORE YOU READ

Set a Purpose for Reading

- ✓ Think about what you will be reading and what you hope to learn from the reading. Consider how the topic might relate to your daily life and what you already know about the topic.

Preview

- ✓ Look over the headings and visuals in the reading, including the chapter title, subheads, photos, graphs, charts, and maps. Look over any "preview" items the chapter provides, such as lists of bold-faced terms.

Predict

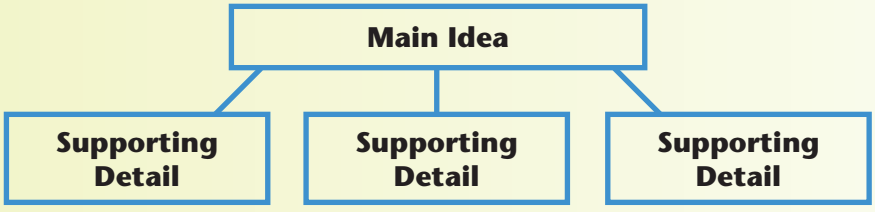
- ✓ Using the information you examined in your preview, predict what you will learn from it.
- ✓ Use the following graphic organizer to help you prepare to read new materials.

Purpose for Reading	Preview	Prediction(s)
I will be reading about _____ _____ _____ _____. I hope to learn _____ _____ _____ _____. The topic relates to my daily life in that _____ _____ _____ _____. I already know _____ _____ _____ _____.	The chapter title is _____ _____. The subheads are _____ _____ _____ _____. Chapter visuals include _____ _____ _____ _____ _____ _____. Chapter preview items include _____ _____ _____ _____.	Based on what I have previewed, I will probably learn _____ _____ _____ _____ _____

AS YOU READ

Find the Main Idea

The main idea is the most important idea in a reading passage. Sometimes the main idea of a passage is stated clearly, often in the first one or two sentences of a paragraph. But sometimes it is not stated so clearly, and you must read carefully to infer the main idea. You can test whether or not you have identified the correct main idea by offering details from the reading that support this idea. Using a graphic organizer like the one below can help you in this process.



Draw Connections Between Items

As you read, pay particular attention to the relationships between people, places, events, and ideas. These relationships can include cause and effect, differences and similarities, sequencing, and problems or solutions. It also contains some lists of clue words that can help you spot some relationships. Recognizing relationships between items can help you understand complicated information.

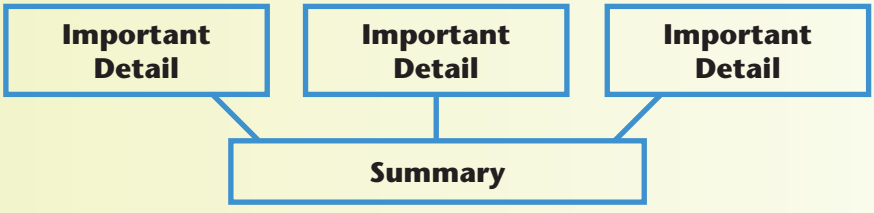
Analyze Visual Information

Pay attention to the visual information in the text. Ask yourself why it is included and what it adds to the text. Think about how your understanding of the visuals as you read may have changed from when you looked at the visuals in your preview exercise.

AFTER YOU READ

Summarize

Once you have finished your reading, try to summarize, or state in the simplest way possible, what the reading passage is all about. The process of summarizing a reading passage is very similar to finding the main idea. As you prepare to summarize a passage, look at your notes on the most important details mentioned in the reading. Use these details to state what happened in the passage in the simplest way possible. Using a graphic organizer like the one below can help you in this process.



Assess

After you have finished reading and summarizing, look back at your predictions about the chapter and analyze whether you learned what you thought you were going to learn. Consider how the information you learned may be put to use in your daily life.

Unit 1



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Introduction to Economics

1 What Is Economics?

2 Economic Systems and Economic Tools

3 U.S. Private and Public Sectors

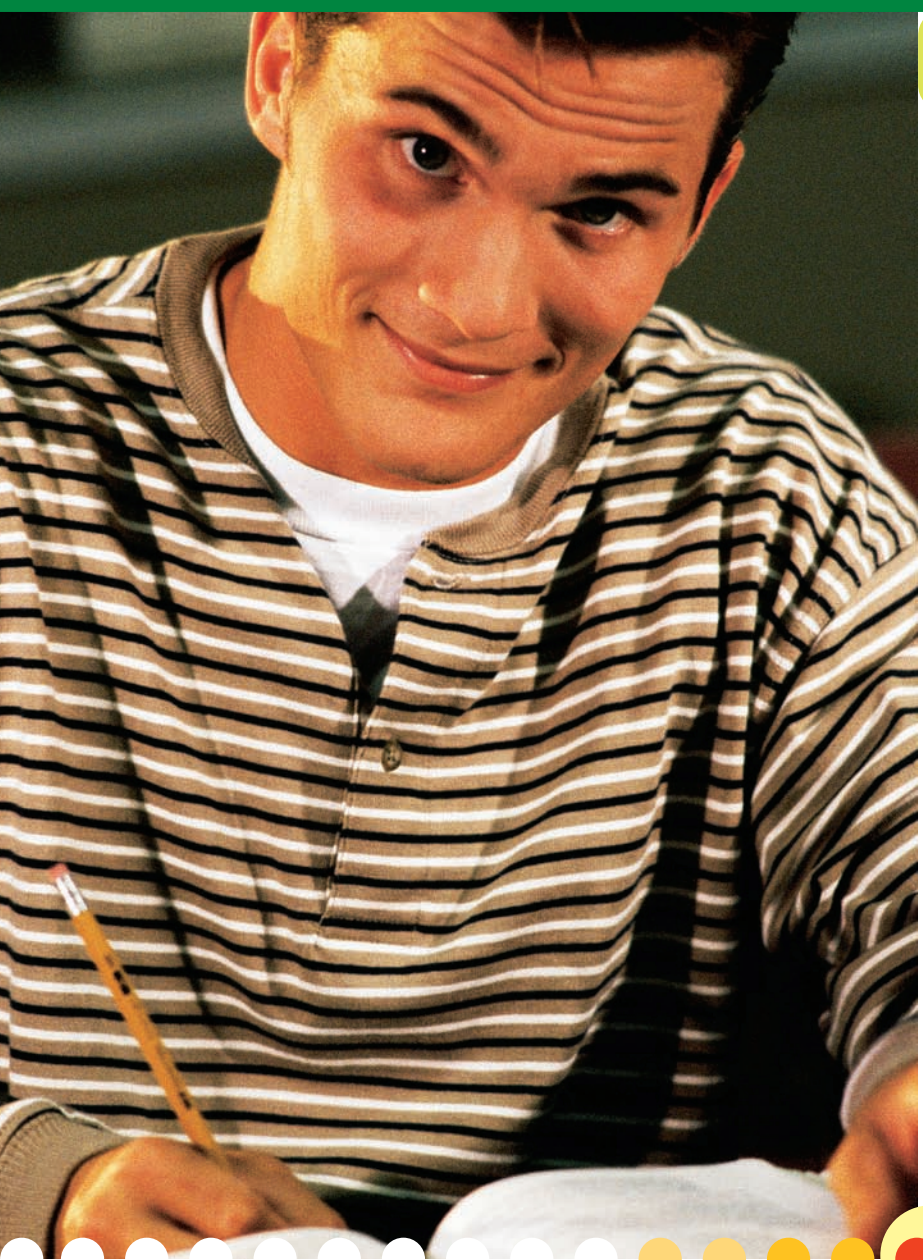
Last Saturday you earned $50 helping a neighbor move some furniture. What will you do with that money? There are many possibilities. You could spend it on movies, pizza, CDs, gasoline, or a favorite brand of jeans. Or you could save the money toward a trip to Europe or a college education. You could even give the money to a worthy charity or to a friend in need. Whatever you decide, you are making an economic choice. Economics focuses on how your choices and the choices of millions of others affect individual markets—such as the market for pizza—and shape the economy as a whole.

1 What Is Economics?

1.1 The Economic Problem

1.2 Economic Theory

1.3 Opportunity Cost and Choice



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CONSIDER

Why are you reading this book right now rather than doing something else?

Why are characters in comic strips like Hagar the Horrible, Cathy, and FoxTrot missing a finger on each hand?

Why is there no sense crying over spilt milk?

In what way are people who pound on vending machines relying on a theory?

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1.1 The Economic Problem

Objectives

- Recognize the economic problem, and explain why it makes choice necessary.
- Identify productive resources, and list examples.
- Define goods and services, list examples, and explain why they are scarce.

Overview

Economics is always in the news. If you read a newspaper, watch television, or go online, you are bombarded with current economic information. Economic issues are reported because they are important in people's lives. People want to know the latest about jobs, housing, prices, taxes, and other matters that affect their income, spending, and wealth. Economics is concerned with identifying and clarifying your choices—the range of possibilities you face now and in the future. As you learn more about economics, you will begin to think more about the choices you face.

Key Terms

scarcity
productive resources
economics
human resources
labor
entrepreneur
natural resources
capital goods
good
service

In the News

Rich or Poor, It's Good to Have Money

In a market economy such as the United States, the more money you have, the more options you have. Alternatively, you could say that the more money you have, the fewer choices you have to make—because you can buy more of what you want. Either way, it's hard to argue against the goal of abundance over scarcity. A recent Gallup poll shows that although few Americans now label themselves as rich, many hope to reach that status some day. One third of those polled say becoming rich is "at least somewhat likely" for them. Ten percent say it is "very likely." Only a third reject the possibility. The dream of eventual wealth is particularly alive among the young. An amazing 51 percent of those 18 to 29 say becoming rich is "a likely possibility." That's important. For a market system to work well, young people must believe in the possibility of succeeding in that system.

THINK ABOUT IT

Is it likely that you will become successful or even rich? Is this important to you? What choices for your future might you make differently if you thought you had little chance of success? How might you and the economy as a whole suffer as a result of your pessimism?

Source: "Many Americans Have Dreams of Wealth," *Gallup Business Monitor*, February, 2003.

Economic Choices

Economics is about making choices. You make economic choices every day. You make choices about whether to get a part-time job or focus on your studies, buy a car or save for college, pack a lunch or buy a Subway sandwich. You already know more about economics than you realize. You bring to the subject a rich personal experience. This experience will help you reinforce your understanding of the basic ideas.

Ask the Xpert!

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Why are economists always talking about money and wealth?

scarcity

A condition facing all societies because there are not enough productive resources to satisfy people's unlimited wants

productive resources

The inputs used to produce the goods and services that people want

economics

The study of how people use their scarce resources to satisfy their unlimited wants

The Economic Problem

Would you like a new car, a nicer home, better meals, more free time, more spending money, more sleep? Who wouldn't? But even if you can satisfy some of these desires, others keep popping up. Here's the economic problem: *Although your wants, or desires, are virtually unlimited, the productive resources available to help satisfy these wants are scarce.* Scarcity creates the economic problem. **Scarcity** is the condition facing all societies because there are not enough productive resources to satisfy people's unlimited wants.

Productive resources, or *factors of production*, are the inputs used to produce the goods and services that people want. *Because productive resources are scarce, goods and services are scarce, too.*

A productive resource is *scarce* when it is not freely available. Because productive resources are scarce, you must choose from among your many wants. Whenever you choose, you must go without satisfying some other wants. The problem of scarce resources but unlimited wants exists for each of the 6.6 billion people on the planet.

Because you cannot have all the goods and services you would like, you must choose among them continually. Making choices means you must pass up some alternatives.

Economics Defined

Economics examines how people use their scarce resources to satisfy their unlimited wants. A taxicab driver uses the cab and other scarce resources, such as knowledge of the city, driving skills, gasoline, and time, to earn income. That income, in turn, buys housing, groceries, clothing, trips to Disney World, and other goods and services that help satisfy some of the driver's unlimited wants.

✓ CHECKPOINT

What is the economic problem, and why does it make choice necessary?

Main Idea

Scarcity

Because productive resources are limited, you cannot have all the goods and services you want. **You must choose some things and give up others. For example, if you decide to buy a mountain bike, what alternative products might you then not be able to afford?**



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Productive Resources

Productive resources, also called *factors of production, inputs,* or simply *resources,* sort into three broad categories: human resources, natural resources, and capital resources.

Human Resources

The first category, **human resources**, is the broad category of human efforts, both physical and mental, used to produce goods and services. *Labor,* such as the labor of a cab driver or a brain surgeon, is the most important of the human resources. **Labor** is the physical and mental effort used to produce goods and services. Labor itself comes from a more fundamental human resource: time. Without time you accomplish nothing. You allocate your time to alternative uses: You can sell your time as labor to earn a *wage,* or you can spend your time doing other things, such as sleeping, eating, studying, playing sports, going online, or watching TV.

Human resources also include the special skills of an **entrepreneur**, who tries to earn a profit by developing a new product or finding a better way to produce an existing one. An entrepreneur seeks to discover profitable opportunities by purchasing resources and assuming the risk of business success or failure. *Profit* equals the *revenue* from sales minus the *cost* of production. If production costs exceed revenue, the entrepreneur suffers a loss. Profit provides the incentive that makes entrepreneurs willing to accept the risk of losing money. Each company in the world today began as an idea in the mind of an entrepreneur.

Natural Resources

Natural resources are so-called "gifts of nature," including land, forests, minerals, oil reserves, bodies of water, and even animals. Natural resources can be divided into renewable resources and exhaustible resources. A *renewable resource* can be drawn on indefinitely if used wisely. Thus, timber is a renewable resource if felled trees are replaced to provide a steady supply. The air and rivers are renewable resources if they are allowed time to recover from a certain level of pollutants. More generally, biological resources such as fish, game, livestock, forests, rivers, groundwater, grasslands, and agricultural soil are renewable if managed properly.

An *exhaustible resource*—such as oil, coal, or copper ore—does not renew itself and so is available in a limited amount. Each gallon of oil burned is gone forever. Sooner or later, all oil wells will run dry. The world's oil reserves are exhaustible.

Capital Resources

Capital resources, commonly called **capital goods**, include all human

NETBookmark

Many top companies believe it is important to devote resources to becoming good corporate citizens. Each year *Business Ethics* magazine and web site publishes a list of the 100 Best Corporate Citizens. Access this web site through thomsonedu.com/school/econxtra. Click on "Read About the 100 Best Corporate Citizens." Read the article and make a list of the factors other than compensation the report cites as creating a better workplace.

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Investigate Your Local Economy

With a partner, make a list of the natural resources found in your state. Research the impact these resources have on your local economy. Which industries use these natural resources? How many people do these industries employ? How many dollars per year do these industries generate? Report your results to the class.

human resources
The broad category of human efforts, both physical and mental, used to produce goods and services

labor
The physical and mental effort used to produce goods and services

entrepreneur
A profit-seeker who develops a new product or process and assumes the risk of profit or loss

natural resources
So-called "gifts of nature" used to produce goods and services; includes both renewable and exhaustible resources

capital goods
All human creations used to produce goods and services; for example, factories, trucks, and machines

Span the Globe

A Yen for Vending Machines

Japan has more vending machines per capita than any other country on the planet—more than twice as many as the United States, and nearly ten times as many as European. The reasons are both economic and cultural. A low birthrate, virtually no immigration and an aging population have created a relative scarcity of labor and driven up the cost of that labor. Therefore, to sell products Japanese retailers rely on capital, particularly vending machines, which eliminates the need for sales clerks. Research shows that Japanese consumers prefer dealing with anonymous machines rather than having to exchange greetings and pleasantries with a real person.

THINK CRITICALLY

Compare the use of the vending machines in Japan with their use in the United States and Europe. Give specific reasons why you think vending machines are used relatively less in these countries as compared with Japan.

Sources: Peter Hadfield, "Public Sold on Ugly, Wasteful Vending Machines," *South China Morning Post,* February 14, 2001; "Coke Testing Vending Unit That Can Hike Prices in Hot Weather," *New York Times,* October 28, 1999; "Sales Per Vending Machine Accelerates in Japan," *Beverage Digest,* August 29, 1999.

creations used to produce goods and services. Capital goods consist of factories, trucks, machines, tools, buildings, airports, highways, and other manufactured items employed to produce goods and services. Capital goods include the taxi driver's cab, the farmer's tractor, the interstate highway system, and your classroom.

good
An item you can see, feel, and touch; requires scarce resources to produce; and satisfies human wants

service
Something not physical that requires scarce resources to produce and satisfies human wants

✓ CHECKPOINT

Name the three categories of productive resources, and provide examples of each.

Goods and Services

Resources are combined in a variety of ways to produce goods and services.

Goods

A farmer, a tractor, 50 acres of land, seeds, and fertilizer come together to grow the good: corn. Corn is a **good** because it is tangible—something you can see, feel, and touch. It requires scarce resources to produce, and it satisfies human wants. This book, the chair you are sitting in, the clothes you are wearing, and your next meal are all goods.

Services

One hundred musicians, musical instruments, chairs, a conductor, a musical score, and a music hall combine to produce the service: Beethoven's Fifth Symphony. The performance of the Fifth Symphony is a **service** because it is intangible—that is, not physical—yet it uses scarce resources to satisfy human wants. Movies, concerts, phone calls, Internet connections, guitar lessons, dry cleaning, and your next haircut are all services.

No Free Lunch

You may have heard the expression "There is no such thing as a free lunch." This is so because all goods involve a cost to someone. The lunch may seem free to you, but it draws scarce resources away from the production of other goods. Also, whoever provides the free lunch often expects something in return. A Russian proverb makes a similar point but with a bit more bite: "The only place you find free cheese is in a mousetrap."

Because goods and services are produced using scarce resources, they are themselves scarce. A good or service is scarce if the amount people desire exceeds the amount available at a zero price. Rather than say "goods and services" every time, this book will sometimes use the term "goods" to mean both goods and services.

A few goods seem free because the amount freely available (that is, available at a zero price) exceeds the amount people want. For example, air and seawater often seem free because you can

breathe all the air you want and have all the seawater you can haul away. Yet, despite the old saying, "The best things in life are free," most goods are scarce, not free. Even those that appear to be free come with strings attached. For example, clean air and clean seawater have become scarce. *Goods that are truly free are not the subject matter of economics. Without scarcity, there would be no need for prices and no economic problem.*

Sometimes you may mistakenly think of certain goods as free because they involve no apparent cost to you. Subscription cards that fall out of magazines appear to be free. At least it seems you would have no problem rounding up a pile of them if necessary. Producing the cards, however, uses scarce resources. These resources were drawn away from other uses, such as producing higher-quality magazines.

✓ CHECKPOINT

Define goods and services, provide examples, and explain why they are scarce.

Assessment 1.1

Key Concepts

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1. What is the central problem you face when you make economic choices?
2. What are examples of productive resources you use in your life?
3. How can you tell whether the food you eat from your refrigerator is scarce?
4. Identify each of the following as a human resource, natural resource, or capital resource:
   a. a hammer used to build a wooden box
   b. the tree that was cut down to make lumber to build a wooden box
   c. the effort used to nail lumber together to make a wooden box

Graphing Exercise

5. Draw a pie chart that demonstrates how you spend the money you have (movies, CDs, clothing, food, transportation, etc). To draw a pie chart, draw a circle and divide it into slices. Label each slice with a type of spending, and identify it as either a good or a service. Each slice represents a percentage of the whole pie. The percents on the slices should add up to 100 percent.

Think Critically

6. **Government** Identify a good or service provided by the government that has no apparent cost for you. Why is this good or service not really free?

1.2 Economic Theory

Objectives

- Explain the goal of economic theory.
- Understand the role of marginal analysis in making economic choices.
- Explain how market participants interact.

Overview

An economy results from the choices that millions of individuals make in attempting to satisfy their unlimited wants. Because these choices lie at the very heart of the economic problem—coping with scarce resources but unlimited wants—they deserve a closer look. Learning about the forces that shape economic choice is the first step toward mastering economic analysis.

Key Terms

economic theory

marginal

market economics

national economics

market

In the News

How Now Dow?

The stock market's Dow Jones Industrial Average, or "the Dow," measures the average stock prices of 30 major U.S. companies. The Dow is reported widely on TV news shows and cable channels and often runs along the bottom of your TV screen. The simple ups and downs of the Dow are much easier for the general public to follow and understand than the more complicated measures of economic activity favored by economists. In fact, many Americans rely on the Dow for cues about where the economy is headed. Although the Dow is only one of many economic indicators, some people adjust their spending and saving behavior based on the Dow's movements. If the Dow is rising, people think the economy is improving, so they may spend more freely. Conversely, if the Dow is falling, they may hold back on spending. In reality, movements in the Dow may be linked to the economy's performance from year to year. Day-to-day fluctuations in the Dow, however, likely are caused more by random events that may or may not have any lasting effect on the economy.

THINK ABOUT IT

Would you consider the Dow a useful measure of economic trends from day to day? From year to year? Why or why not?

Source: "As the Dow Average Goes, So Goes Americans' Economic Confidence," *Gallup Business Monitor*, October, 2002.

The Role of Theory

Economists develop theories, or models, to help explain economic behavior. An **economic theory**, or *economic model*, is a simplification of economic reality that *is used to make predictions about the real world*. Thus the goal of economic theory is to make predictions about the real world, such as what happens to consumption of Pepsi when its price increases.

Simplify the Problem

A theory captures the important elements of the problem under study. It need not spell out every detail and relationship. In fact, the more detailed a theory gets, the more confusing it becomes, and the less useful it may be. The world is so complex that simplifying often is necessary to make sense of things. Think of comic strip characters, for example. Cartoonists often simplify their characters, leaving out fingers or even a mouth. You might think of economic theory as a stripped-down, or streamlined, version of economic reality. One way to strip down reality is by using simplifying assumptions.

Simplifying Assumptions

To help develop a theory, economists make simplifying assumptions. One category of assumptions is the *other-things-constant assumption*. The idea is to identify the variables of interest and then focus exclusively on the relations among them, assuming that nothing else of importance changes—that other things remain constant.

Suppose you are interested in how a change in the price of Pepsi affects the amount purchased. To isolate the relationship between these two variables—price and quantity purchased—you assume for purposes of the model that there are no changes in other relevant variables such as consumer income, the price of Coke, and the average outdoor temperature.

Economists also make assumptions about what motivates people—how people behave. These are called *behavioral assumptions*. Perhaps the most basic behavioral assumption is that people make choices based on self-interest.

economic theory
A simplification of economic reality used to make predictions about the real world

e-conomics

THE RATIONAL CHOICE IS TO STAY HOME FROM WORK

Telecommuting has become a popular option for businesses and their employees over the last decade and a half. Utilizing advanced function-laden cell phones, wireless laptop connectivity, and paperless work environments, the estimated number of Americans who telecommute has increased dramatically. Some telecommuters work at home all week and others mix it up. Telecommuters report a great deal of satisfaction with this work arrangement. More than two-thirds of the telecommuters surveyed said they are more satisfied since they began working at home. On the corporate side, some companies that have telecommuting programs have reported significant percent increases in productivity, lower administrative and overhead costs, a reduction in turnover rates, and an increased ability to hire better, more qualified workers.

THINK CRITICALLY

What are some reasons it might not be in a worker's rational self-interest to telecommute? Is this a work option you might enjoy? Why or why not?

Source: May Wong, "More Businesses Feeling Right at Home," Associated Press, June, 2002.

Rational Self-Interest

A key assumption about behavior is that in making choices, you rationally select alternatives you perceive to be in your best interests. By *rational,* economists mean that you try to make the best choices you can, given the information available. *In general, rational self-interest means that you try to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit.*

Rational self-interest does not necessarily mean selfishness or greed. You probably know people who are tuned to radio station WIIFM (What's In It For Me). For most of you, however, self-interest often includes the welfare of your family, your friends, and perhaps the poor of the world. Even so, your concern for others is influenced by your personal cost of that concern. You may volunteer to drive a friend to the airport on Saturday afternoon but are less likely to offer a ride if the flight departs at 6:00 A.M. When you donate clothes to charitable organizations such as Goodwill Industries, these clothes are more likely to be old than new. People tend to give more to a favorite charity if contributions are tax deductible.

The assumption of rational self-interest does not rule out concern for others. It simply means that concern for others is influenced to some extent by the same economic forces that affect other economic choices. The lower your personal cost of helping others, the more help you will offer.

Rationality implies that each consumer buys the products expected to maximize his or her level of satisfaction. Rationality also implies that each firm supplies the products expected to maximize that firm's profit. These kinds of assumptions are called behavioral assumptions because they specify how economic decision makers are expected to behave—what makes them tick, so to speak.



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What personal costs would you incur if you chose to volunteer at a soup kitchen that serves homeless people?

Everybody Uses Theories

Many people don't understand the role of theory. Perhaps you have heard, "Oh, that's fine in theory, but in practice it's another matter"—meaning that the theory provides little aid in practical matters. People who say this do not realize that they are merely substituting their own theory for a theory they either do not believe or do not understand. They really are saying, "I have my own theory that works better."

Everyone uses theories, however poorly defined or understood. Someone who pounds on a vending machine that just ate a quarter has a crude theory about how that machine works and what went wrong. One version of that theory might be, "The quarter drops through a series of whatchamacallits, but sometimes the quarter gets stuck. *If* I pound on the machine, *then* I can free up the quarter and send it on its way." This theory seems to be so widely used that many people continue to pound on vending machines that fail to perform. (This is a real problem for that industry and one reason why newer vending machines are fronted with glass.) Yet, if you asked any of these mad pounders to explain their "theory" of how the machine works, he or she would look at you as if you were crazy.

Economists Tell Stories

Economists explain their theories by telling stories about how they think the economy works. To tell a convincing story, an economist relies on case studies, anecdotes, parables, the listener's

personal experience, and supporting data.

Throughout this book, you will hear stories that shed light on the ideas under consideration. Stories, such as the one about the vending machine, breathe life into economic theory.

Normative Versus Positive Statements

Economists usually try to explain how the economy works. Sometimes they concern themselves not with how the economy does work but how it should work. Compare these two statements: "The U.S. unemployment rate is 5.8 percent" versus "The U.S. unemployment rate should be lower." The first is called a positive economic statement because it is a statement about economic reality that can be supported or rejected by reference to the facts. The second is called a normative economic statement because it reflects someone's opinion. An opinion is merely that—it cannot be shown to be true or false by reference to the facts.

Positive statements concern what is. Normative statements concern what, in someone's opinion, *should be*. Positive statements need not necessarily be true, but you should be able to find out whether they are true or false by referring to the facts. Economic theories are expressed as positive statements such as, "If the price increases, then the quantity purchased will decrease."

Most of the disagreement among economists involves normative debates—for example, what should be the appropriate role of government—rather than statements of positive analysis. To be sure, many theoretical issues remain unresolved. However, economists do agree on most basic theoretical principles—that is, about positive economic analysis.

Normative statements, or personal opinions, are relevant in debates about public policy (such as the proper role of government) provided that opinions are distinguished from facts. In such debates, you are entitled to your own opinions, but you are not entitled to your own facts.

✓CHECKPOINT

Explain the goal of economic theory.

Marginal Analysis

Economic choice usually involves some adjustment to the existing situation, or the status quo. Your favorite jeans are on sale, and you must decide whether to buy another pair. You have just finished dinner at a restaurant and are deciding whether to eat dessert. Amazon.com must decide whether to add an additional line of products. The school superintendent must decide whether to hire another teacher.

Compare Marginal Cost with Marginal Benefit

Economic choice is based on a comparison of the expected marginal benefit and the expected marginal cost of the action under consideration. **Marginal** means incremental, additional, extra, or one more. Marginal refers to a change in an economic variable, a change in the status quo.

marginal

Incremental, additional, extra, or one more; refers to a change in an economic variable, a change in the status quo

A rational decision maker will change the status quo as long as the expected marginal benefit from the change exceeds the expected marginal cost. For example, you compare the marginal benefit you expect from eating dessert (the added satisfaction) with its marginal cost (the added dollar cost, time, and calories). Likewise, Amazon.com compares the marginal benefit expected from adding a new product line (the added sales revenue) with the marginal cost (the added cost of resources required).

Typically, the change under consideration is small, but a marginal choice can involve a major economic adjustment, as in your decision whether or not to go to college. For a firm, a marginal choice might mean building a factory in Mexico or even filing for bankruptcy protection.

Focusing on the effect of a marginal adjustment to the status quo cuts the analysis of economic choice down to a manageable size. Rather than confront a

puzzling economic reality head-on, economic analysis can begin with a marginal choice and then show how that choice affects a particular market and shapes the economy as a whole.

To the noneconomist, *marginal* usually means inferior, as in "a movie of marginal quality." Forget that meaning for this course and instead think of *marginal* as meaning incremental, additional, extra, or one more.

Choice Requires Time and Information

Rational choice takes time and requires information, but time and information are scarce and therefore valuable. If you have any doubts about the time and information required to make choices, talk to someone who recently purchased a home, a car, or a personal computer. Talk to a corporate official deciding whether to introduce a new product, sell online, build a new factory, or buy another firm. Or consider your own decision about going to college. You already may have talked to friends, relatives, teachers, and guidance counselors about it. You might review school catalogs, college guides, and web sites. You might even visit some campuses. The decision will take time and money, and probably will involve some hassle and worry.

Because information is costly to acquire, you are often willing to pay others to gather and digest it for you. College guides, travel agents, real estate brokers, career counselors, restaurant critics, movie reviewers, specialized web sites, and *Consumer Reports* magazine all offer information to help improve your economic choices. *Rational decision makers will continue to acquire information as long as the marginal benefit expected from that information exceeds the marginal cost of gathering it.*

Market Economics and National Economics

Although you have made thousands of economic choices, you probably have seldom thought about your own economic behavior. For example, why are you reading this book right now rather than doing something else? **Market economics**, or *microeconomics*, focuses on your economic behavior and the economic behavior of others who make choices involving what to buy and what to sell, how much to work and how much to play, how much to borrow and how much to save. Market economics examines the factors that influence individual economic choices and how markets coordinate the choices of various decision makers. For

market economics
Study of economic behavior in particular markets, such as the market for computers or for unskilled labor

Main Idea

Marginal Cost/Benefit

To make effective consumer decisions, you need to compare the costs and benefits of alternative choices. **Oranges are in season, and your local market is offering them for a very low price. What would be the marginal benefit of purchasing twice as many oranges as you normally would? What would be the marginal cost of this decision?**



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example, market economics explains how price and output are determined in the markets for breakfast cereal, sports equipment, or unskilled labor.

You probably have given little thought to what influences your own economic choices. You likely have given even less thought to how your choices link up with those made by hundreds of millions of others in the U.S. economy to determine economy-wide measures such as total production, employment, and economic growth. **National economics**, or *macroeconomics*, focuses on the performance of the economy as a whole, especially the national economy.

Thus market economics looks at the individual pieces of the economic puzzle. National economics fits all the pieces together to look at the big picture.

✓CHECKPOINT

Describe the role of marginal analysis in making economic choices.

Market Participants

There are four types of decision makers in the economy: households, firms, governments, and the rest of the world. Their interaction determines how an economy's resources get allocated.

Four Types of Participants

Households play the leading role in the economy. As consumers, households demand the goods and services produced. As resource owners, households supply the resources used to produce goods and services.

Firms, governments, and *the rest of the world* demand the resources that households supply, and then use these resources to supply the goods and services that households demand. The rest of the world includes foreign households, firms, and governments that supply resources and products to U.S. markets and demand resources and products from U.S. markets.

Markets

Markets are the means by which buyers and sellers carry out exchange. By bringing together the two sides of exchange, demand and supply, markets determine price and quantity. Markets may be physical places, such as supermarkets, department stores, shopping malls, or flea markets. Markets also involve other ways for buyers and sellers to communicate, such as the stock market, telephones, bulletin boards, the Internet, and face-to-face bargaining.

market
The means by which buyers and sellers carry out exchange

national economics
Study of the economic behavior of the economy as a whole, especially the national economy

Markets provide information about the quantity, quality, and price of products offered for sale. Goods and services are bought and sold in *product markets*. Resources are bought and sold in *resource markets*. The most important resource market is the labor, or job, market.

A Circular-Flow Model

Now that you have learned a bit about economic decision makers, consider how they interact. Such a picture is conveyed by the *circular-flow model*, which describes the flow of resources, products, income, and revenue among economic decision makers. A simple circular-flow model focuses on the interaction between households and firms in a market



Divide into groups of four students to study how market participants interact. One pair of students will work together to trace the flow in the circular model from households to firms. The other pair will trace the flow from firms through the product markets. Each pair of students will then explain the flow they have studied to the other pair.

economy. Figure 1.1 shows households on the left and firms on the right.

Households supply human resources, natural resources, and capital resources to firms through resource markets, shown in the lower portion of the figure. In return, households demand goods and services from firms through product markets, shown on the upper portion of the figure. Viewed from the business end, firms supply goods and services to households through product markets, and firms demand human resources, natural resources, and capital resources from households through resource markets.

The flows of resources and products are supported by the flows of income and expenditure—that is, *by the flow of money*. The supply and demand for resources come together in resource markets to determine resource prices, which flow as income to the households. The supply and demand for products come together in product markets to determine the prices for goods and services, which flow as revenue to firms.

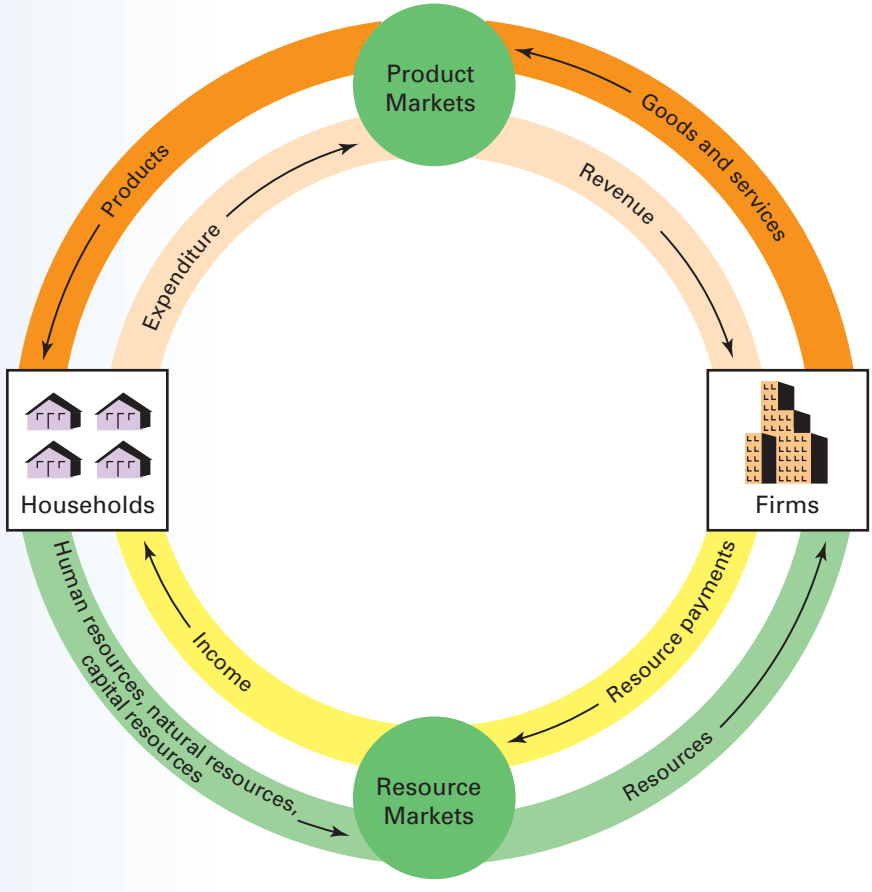
Resources and products flow in one direction—in this case, counterclockwise—and the corresponding payments flow in the other direction—clockwise.

✓ CHECKPOINT

How do market participants interact?

Circular-Flow Model for Households and Firms **Figure 1.1**

Households earn income by supplying resources to the resource markets, as shown in the lower left portion of the model. Firms demand these resources in order to produce goods and services, which they then supply to the product markets. This is shown in the right-hand portion of the model. Households spend their income to demand these goods and services. This spending flows through the product market to become revenue to firms.



Assessment 1.2

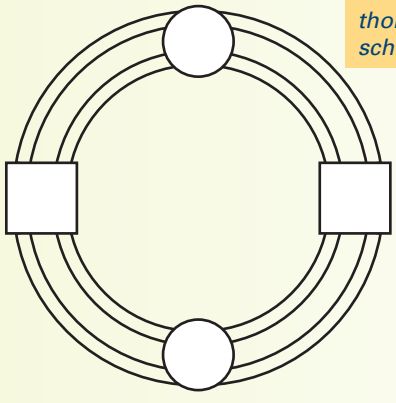
Key Concepts

1. How are economic theories used in the real world?
2. Why do economists often use the other-things-constant assumption when they develop economic theories?
3. What does rational self-interest suggest that people want to achieve?
4. When Anthony went to watch another school's basketball team he saw that their center was nearly seven-feet tall. He immediately decided that this person would be that team's best rebounder. What theory did he use to draw this conclusion?
5. Identify each of the following as an example of either a positive or normative statement.
   a. Drew earns $7.50 per hour at his job.
   b. $250 is too much to pay for a prom dress.
   c. Schools should hire more math teachers.
   d. The U.S. unemployment rate in 2005 was 5.1%.
   e. The minimum wage ought to be increased.
6. Tomás bought two pairs of shoes for $60 each. He chose not to purchase a third pair at this price. What do you know about the marginal value of a third pair of shoes for Tomás?

Xtra!
Study tools
thomsonedu.com/school/econxtra

Graphing Exercise

7. Latischa works for a business that produces pocket calculators. She spends $100 on phone service from the $2,000 she earns each month. She also pays rent of $800 per month. Draw and label a simple circular-flow model. Use the figure to the right as a guide. Place her income and both expenditures described on your model, and describe the flows between households and firms that result.



Think Critically

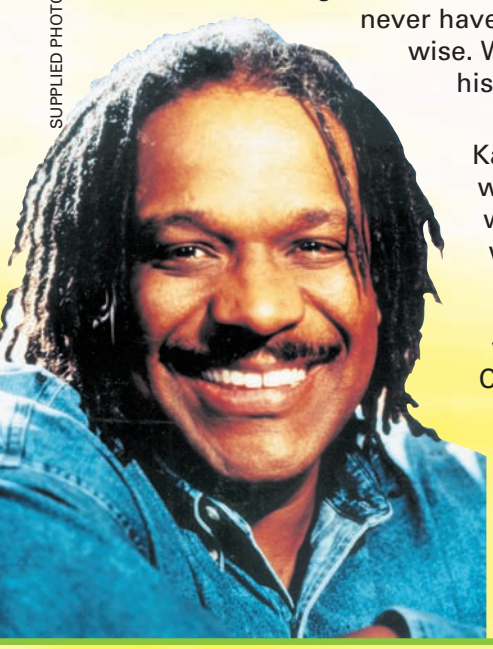
8. **Research** Find the number of new claims for unemployment insurance compensation filed in a recent week in your state at www.dol.gov. Explain how unemployment relates to both market economics and national economics.
9. **Marketing** Examine some of the advertising that a college or university uses to try to convince new students to apply for admission. Explain how this advertising is intended to help potential students make rational choices.

movers & shakers

Christopher Curtis *Children's Book Author*

For 13 years after high school graduation, Christopher Curtis worked on an assembly line. His job was hanging doors on automobiles. It was boring, repetitive work, but he believes it helped him become a writer.

"My friend and I used to 'double up' on the assembly line. That means we would each hang 30 doors in a row instead of doing every other one, which allowed us each a half hour off every hour. I discovered that if I spent my half hour off the line writing, time would fly by for me." Writing every day helped Curtis develop the flexibility and confidence in his writing that he believes he might never have developed otherwise. Writing became his passion.



SUPPLIED PHOTO

Curtis's wife, Kaysandra, knew he wanted to be a writer. Eventually, with her encouragement, he quit his job and began writing full-time. Curtis didn't own a computer, so armed with a stack of legal pads, he spent his days at the library writing his book with pen and paper. He also began attending college. He eventually earned a political science degree from the University of Michigan.

Curtis's first book, *The Watsons Go to Birmingham—1963*, is a fictional book for children. It received two honors: a Newbery Honor and a Coretta Scott King Honor. Such recognition encouraged him to begin work on his second children's book, *Bud, Not Buddy*, about a ten-year-old boy who leaves his foster home in search of his father. This book won the Newbery Medal, the most prestigious award in children's literature. It also won the Coretta Scott King Medal, given each year to a black writer for an inspirational and educational contribution to literature. His third book, published in 2004, is titled *Bucking the Sarge*. His fourth book, *Mr. Chickee's Funny Money*, was published in 2005.

Today, in addition to writing books, Curtis frequently visits schools. He meets with groups of children, explaining how he became a writer, and describing the steps he takes to write a book. He also reads to them from his books. "I tell kids that if I can do it, they can do it, too."

Aspiring writers often ask Curtis for advice. "I always tell them that the more they do it, the better they'll get. You have to be patient." He encourages everyone to look for opportunity in spite of barriers they may face. "Lack of money is a very real barrier, but it can be broken. If you are really passionate, do it for the sake of love. Plow right through."

SOURCE READING

Curtis said that if he and his friend doubled up on their job of hanging doors in the automobile factory, it "allowed us each a half hour off every hour. I discovered that if I spent my half hour off the line writing, time would fly by for me." What was the economic choice that Curtis and his friend made in the situation he describes? What were the marginal cost and the marginal benefit of their decision?

ENTREPRENEURS IN ACTION

Like everyone else, entrepreneurs make choices based on their own self-interests. Christopher Curtis chose to become a children's book author because of his passion for writing and his commitment to children. What are you passionate about? Into what type of career could you channel this passion? Write a paragraph to answer these questions.

Source: *USA Today* Magazine: www.usatoday.com/life/books/news/2004-10-18-bucking-the-sarge_x.htm; Random House web site: www.randomhouse.com.

1.3 Opportunity Cost and Choice

Objectives

- Define opportunity cost.
- Evaluate guidelines for making choices.
- Analyze the opportunity cost of attending college.

Overview

Think about a decision you just made: the decision to read this chapter right now rather than study for another course, play sports, watch TV, go online, get some sleep, or do something else. Suppose your best alternative to reading this now is getting some sleep. The cost of reading this chapter is passing up the opportunity to sleep. Because of scarcity, whenever you make a choice you must pass up another opportunity—you experience an *opportunity cost*.

Key Terms

opportunity cost

sunk cost

In the News

Cost of Success for Female Attorneys

For years about half of the nation's law school graduates have been women. However, women make up only about 17 percent of partners in the country's top firms. "Firms want women to stay. Men at the firms want women to stay, and women want to stay. So why aren't they?" asks Washington lawyer Karen Lockwood. Research has shown that many women leave large law firms because they want to be more actively involved with their families. However, many female attorneys say they would like to find a way to both meet their family obligations and maintain their career. For this reason most women who leave large law firms change careers or practice law in a different setting. Some female attorneys also leave large firms because they dislike the competitive environment. Women generally do not "self promote" as aggressively as men do. For some women, the self-promotion activities they must engage in to get ahead generate a high degree of dissatisfaction. Some also become distressed when, after entering the profession to do meaningful work, they find themselves part of a "billable hours production unit." Billable hours are the number of hours an attorney can bill to a client. Compensation and advancement opportunities in a law firm usually are tied to the number of billable hours attorneys provide as well as the leadership and business development activities they pursue. In short, the more time attorneys devote to work-related activities, the more they earn, and the better chance they have for advancement.

THINK ABOUT IT

What are some of the opportunity costs to a female attorney if her goal is to become a partner in a large law firm?

Source: Timothy L. O'Brien, "Up the Down Staircase," *New York Times*, March 19, 2006.

Opportunity Cost

opportunity cost
The value of the best alternative passed up for the chosen item or activity

What do you mean when you talk about the cost of something? Isn't it what you must give up or go without to get that thing? The **opportunity cost** of the chosen item or activity is *the value of the best alternative you must pass up*. You can think of opportunity cost as the *opportunity lost*. Sometimes opportunity cost can be measured in dollar terms. However, as you shall see, money usually captures only part of opportunity cost.

Nothing Better to Do?

How many times have you heard people say they did something because they "had nothing better to do"? They actually mean they had no alternative more attractive than the one they chose. Yet, according to the idea of opportunity cost, people *always* do what they do because they had nothing better to do. The choice selected seems, at the time, preferable to any other possible choice. You are reading this page right now because you have nothing better to do.



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Participating in a team sport such as track or soccer or basketball involves opportunity costs. If you are involved in a team sport at your school, what opportunity costs do you face? If you are not involved in a team sport, were the opportunity costs of involvement a factor in your decision not to participate? Why or why not?

Estimate Opportunity Cost

Only the individual decision maker can select the most attractive alternative. You, the chooser, seldom know the actual value of the best alternative you gave up, because that alternative is "the road not taken."

If you give up an evening of pizza and conversation with friends to work on a term paper, you will never know the exact value of what you gave up. You know only what you *expected*. You expected the value of working on that paper to exceed the value of the best alternative.

Opportunity Cost Varies

Your opportunity cost depends on your alternatives. This is why you are less likely to study on a Saturday night than on a Tuesday night. On Saturday night, the opportunity cost of studying is higher because your alternatives are more attractive than they are on a Tuesday night, when there's less going on.

What if you go to a movie on Saturday night? Your opportunity cost is the value of the best alternative you gave up, which might be attending a basketball game. Studying on Saturday night might rank well down the list of alternatives for you—perhaps ahead of cleaning your room but behind watching TV.

Opportunity cost is a personal thing, but in some cases, estimating a dollar cost for goods and services may work. For example, the opportunity cost of a new DVD player is the benefit of spending that $200 on the best alternative. In other cases, the dollar cost may omit some important elements, particularly the value of the time involved. For example, renting a movie costs not just the rental fee but the time and travel expense it takes to get it, watch it, and return it.

✓ CHECKPOINT

What is opportunity cost, and why does it vary with circumstances?

ETHICS IN ACTION

Can Business Decisions Be Ethical?

Most decisions in business are made with the primary objective of maximizing a firm's profit. Business executives have many people looking over their shoulders to make sure they do the right thing—customers, employees, stockholders, competitors, public interest groups, regulators, and tax officials. Still, in their quest for profit, these same executives sometimes are in a position to make decisions that could harm society. For example, emissions from a factory could cause air or water pollution. When faced with a choice that could harm society, businesspeople could apply ethical reasoning to their decision making. Ethics is the practice of deciding what is right or wrong in a reasoned, impartial manner. There are two major approaches you can use in making ethical decisions. One approach evaluates the results of an action as good or bad. For each alternative evaluated, the decision maker must anticipate how many people will be positively and negatively affected. Another approach to ethical reasoning is based on ethical rules. Using rules-based ethical reasoning, the actions themselves are thought of as either right or wrong. The standard for judging an action comes either from a recognized authority, such as the law or a religious text, or human reasoning. To apply human reasoning, you can perform a test called "universalizing the action." You picture everyone doing the action, and then ask yourself, "Is this irrational, illogical, or self-defeating?" If the action fits any of these categories, it is ethically wrong. For example, if everyone created air pollution, everyone's quality of life would be diminished.

THINK CRITICALLY

Think of one or two additional examples of decisions made by business leaders that could impact society as a whole. Would society benefit in these cases if ethical reasoning, rather than just profit maximization of the firm, also were applied to the decision making? For each example, explain whether the decision maker would apply results-based ethical reasoning or rules-based ethical reasoning to arrive at an answer.

Choose Among Alternatives

Now that you understand what opportunity cost is and how it can vary depending on the circumstances, consider what's involved in actually choosing among alternatives.

Calculate Opportunity Cost

Economists assume that your rational self-interest will lead you to select the most valued alternative. This does not mean you must calculate the value of all possible alternatives. Because acquiring information about alternatives is costly and time-consuming, you usually make choices based on limited or even faulty information. Indeed, some choices may turn out to be poor ones: You went for a picnic but it rained. Your new shoes pinch your toes.

Regret about lost opportunities is captured in the common expression "coulda, woulda, shoulda." At the time you made the choice, however, you believed you were making the best use of all your scarce resources, including the time required to gather information and assess your alternatives.

Time—The Ultimate Limitation

The sultan of Brunei is among the world's richest people, with wealth estimated at $16 billion based on huge oil revenues that flow into his tiny country. He built two palaces, one for each wife.



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You are standing in line at a movie theater's concession stand when a cashier opens another line. Should you stay in the line you have been waiting in, or move to the new line? What economic concept does this situation illustrate?

Supported by his great wealth, the sultan appears to have overcome the economic problem caused by scarcity. However, although he can buy just about whatever he wants, his time to enjoy these goods and services is scarce. If he pursues one activity, he cannot at the same time do something else. Each activity he undertakes has an opportunity cost. Consequently, the sultan must choose from among the competing uses of his scarcest resource, time. Although your alternatives are less exotic, you too face a time constraint, especially when term papers and exams claim your time.

Ignore Sunk Cost

Suppose you have just finished shopping and are wheeling your shopping cart to the checkout. How do you decide which line to join? You pick the one you think will involve the least time. What if, after waiting ten minutes in a line that barely moves, you notice that a cashier has opened another line and invites you to check out. Do you switch to the open line, or do you think, "I've already spent ten minutes in this line. I'm staying here"?

sunk cost

A cost you have already incurred and cannot recover, regardless of what you do now

The ten minutes you waited represents a **sunk cost**, which is a cost you have already incurred and cannot recover, regardless of what you do now. You should ignore sunk cost in making economic choices, and you should switch to the newly opened line.

Economic decision makers should consider only those costs that are affected by their choice. Sunk costs already have been incurred and are not recoverable. Therefore, sunk costs are irrelevant and should be ignored. Likewise, you should walk out on a boring movie, even one that cost you $10. The irrelevance of sunk costs is underscored by the proverb, "There's no point crying over spilt milk." The milk has already spilled. What you do now cannot change that fact.

✓ CHECKPOINT

Evaluate guidelines for choosing among alternatives.

Sharpen Your Skills



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Understand Cause and Effect

Economic events don't just happen. They almost always result from other things that happened first. One of the best ways to understand an economic event is to look at the factors that caused it to take place. An important benefit of learning about past economic events is the insight you will gain into what might happen if similar events take place in the future.

In 1973, for example, war broke out between Israel and some of her neighboring Arab states. As a result, the flow of crude oil from the Middle East to the United States and other nations was reduced by as much as 50 percent. Oil is a basic natural resource used to produce many goods and services. In 1973, as today, the economies of the United States and most other developed nations rely on imported oil. With a reduced supply of oil these nations were faced with different sets of opportunity costs when they chose how to use the oil that they had. With this in mind, answer the following questions.

Apply Your Skill

1. Due to the shortage of oil in 1973 and 1974, not enough gasoline could be produced for all the people who wanted to buy it. To try to address the problem, the government limited the amount of gasoline most people could purchase to ten gallons at one time. Later, people were allowed to buy gasoline only on every other day of the week and for a few months, no gasoline could be purchased on Sundays. Even so, some gas stations ran out of gasoline. There often were two- to three-hour waits in line to buy gasoline when it was available. Describe how events that took place nearly five thousand miles from the United States affected the economic decisions made by American consumers in 1973 and 1974. How did this change the opportunity costs of their decisions?
2. Imagine that a large pipeline that carries 25 percent of the natural gas used in the Northeast is destroyed in an earthquake. It is the middle of winter and nearly half the homes in the Northeast are heated with natural gas. Further, 20 percent of the electrical power plants, and 15 percent of other businesses rely on natural gas to operate. What economic effects are likely to result from this event? How would it change the opportunity costs people face when they make decisions?

The Opportunity Cost of College

Now that you have some idea about opportunity cost and choice, you can apply these concepts in deciding whether or not to go to college.

What will be your opportunity cost of attending college full-time? What will be the most valued alternative you must give up to attend college? If you already know what kind of job you can get with a high school education, you have a fair idea of the income you must give up to attend college.

Forgone Earnings

You may think that if you do not go to college, you could find a job paying $16,000 a year, after taxes. But wait a minute. Don't many college students also work part-time during the school year and full-time during the summer? If you do the same, suppose you could earn $7,000 a year, after taxes.

Thus, by attending college you give up the $16,000 you could earn from a full-time job, yet you could still earn $7,000 from part-time and summer work. Your annual earnings would be $9,000 lower ($16,000 minus $7,000) if you attend college. One part of your opportunity cost of college is the value of what you could have purchased with that additional $9,000 in income.

Direct Costs of College

You also need to consider the direct costs of college itself. Suppose you must pay $6,000 a year for tuition, fees, and books at a public college (paying out-of-state rates would add about $8,000 to that, and attending a private college would add about $16,000). The opportunity cost of paying for tuition, fees, and books is the value of the goods and services that money could have purchased otherwise.

Other College Costs

How about room and board? Expenses for room and board are not an opportunity cost of college because, even if you did not attend college, you would still need to live somewhere and eat something, though these costs could be higher at college. Likewise, whether or not you attended college, you would still pay for items such as movies, CDs, clothing, toiletries, and laundry. Such expenses are not an opportunity cost of attending college. They are personal expenses that arise regardless of what you do. So, for simplicity, assume that room, board, and personal expenses will be the same whether or not you attend college.

The forgone earnings of $9,000 plus the $6,000 for tuition, fees, and books yield an opportunity cost of $15,000 per year for a student paying in-state rates at a public college. The opportunity cost jumps to about $23,000 for those paying out-of-state rates at a public college and to about $31,000 for those at a private college. Scholarships, but not loans, would reduce your opportunity cost.

Other-Things-Constant Assumption

This analysis assumes that all other things are constant. If you expect college to be more painful than your best alternative, then the opportunity cost of attending college is even higher. In other words, if you expect to find college difficult, boring, and in most ways more unpleasant than a full-time job, then your money cost understates your opportunity cost. You not only pay the dollar cost of college, but you must also give up a more pleasant quality of life. If, however, you think college will be more enjoyable than

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To examine whether college would be a sensible investment for you, try Professor Jane Leuthold's COLLEGE CHOICE program. This program will guide you through applying economic tools such as cost-benefit analysis to determine whether it makes economic sense to enroll in a college program of your choosing. This program may be accessed through thomsonedu.com/school/econxtra.

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a full-time job, then the dollar cost overstates your opportunity cost—the next best alternative involves a less satisfying quality of life.

Evidently, many young people view college as a wise investment in their future, even though college is costly and perhaps even painful for some. College graduates on average earn about twice as much per year as high-school graduates.

Still, college is not for everyone. Some find the opportunity cost too high. For example, Tiger Woods, once an economics major at Stanford University, dropped out after two years to earn a fortune in professional golf, including a $100 million five-year endorsement contract with Nike. Some high school seniors who believe they are ready for professional basketball skip college altogether, as do most pro tennis players and many singers and actors. However, for most of you, the opportunity cost of attending college isn't nearly as high.

✓ CHECKPOINT

How do you measure the opportunity cost of attending college?



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Have you made your decision about whether to attend college? If not, applying this section of the textbook to your own situation will help you carefully weigh the opportunity costs of this important decision.

Assessment 1.3

Key Concepts

1. Why must there be an opportunity cost for every choice you make?
2. Why isn't the opportunity cost of using your time to do homework always the same?
3. What factor forces even people who are very wealthy to face opportunity costs?
4. Why should consumers ignore costs they have already paid when making decisions?
5. What is the greatest cost of attending college at in-state public institutions?

Graphing Exercises

6. Harold sells snowblowers at his hardware store in North Dakota. Although he never changes his price, his sales vary throughout the year. The following table shows his sales in each month of last year. Draw a line graph that demonstrates these data.
7. Explain how your graph shows that the value of buying a snowblower changes over time. What does this have to do with the opportunity cost of other uses for limited funds?

Harold's Snowblower Sales

Month	Sales
January	13
February	11
March	3
April	0
May	0
June	0
July	0
August	0
September	8
October	32
November	38
December	21

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Think Critically

8. **Entrepreneurship** Wilma owns a 200-acre farm. She could plant either beans or tomatoes. If the weather is sunny and there is enough rain, she can earn $400 per acre of tomatoes. However, if it is dry or cloudy, tomatoes may earn her no profit at all. Beans are hardy and will grow well unless the weather is truly awful. Wilma can count on earning $200 per acre from beans. Explain why Wilma cannot be sure of the opportunity cost of any decision she might make. What do you think she will choose to do? Why?
9. **Office Technology** Ms. Morra teaches introductory classes in office technology. Her school board has approved $15,000 for her to buy new computers to replace her old outdated models. For this amount she can buy 20 low-end computers that just meet her student's current needs, or she can purchase 10 computers with greater speed and capabilities that she really would like her students to learn to use. What is her opportunity cost for either of these choices?

CONNECT TO HISTORY



Glassmaking in Jamestown

Despite failed attempts to establish a colony in the New World, in 1606 King James I of England granted a charter for this purpose to the Virginia Company of London. Because earlier enterprises had been expensive, the required funds were raised through a joint stock company. Colonists were instructed to settle land between the 34th and 41st parallels. The three ships arrived at the site of Jamestown Island on May 13, 1607.

Labor for the colony was provided by "colonists" hired by the company. Many of the colonists, lured by the promise of easy gold, were not prepared for the ordeal that followed. These gentlemen, often younger sons of wealthy families who were not used to hard work, struggled to survive. Still, these men perceived their opportunity cost as being small because they stood to inherit little at home. The colony seemed a way for them to gain the land and prominence they could not obtain in England. Well-to-do colonists who provided their own armor and weapons were paid in land, dividends, or additional shares of stock. Less-well-off colonists received clothes, food, and arms from the company, and then after seven years, they received land.

The Virginia Company was still recruiting colonists when Captain Christopher Newport returned to England, bringing word of a struggling colony. Although disappointed that gold and silver did not lie on the beach or grow on the trees, the entrepreneurs of the Virginia Company still saw profitable opportunities in various industries. They believed the colony could take advantage of the land's natural resources and manufacture products for sale in England. One such product was glass. Demand for glass products in England in the early seventeenth century was growing. However, scarce resources in England limited the growth of the industry. England's forests were being depleted, and it took a lot of wood—about a week of burning two to three cords per day—to get the furnaces hot enough to produce glass. The New World, with its unlimited forests, appeared an ideal spot for a glassmaking industry.

Glassmaking in England also suffered from a shortage of labor, as few people were skilled in the craft. Although some glassmakers had come from foreign countries, England could not meet its glass wants domestically. Much of it had to be imported, leading the Company to believe that a Virginia-based enterprise could produce glass more cheaply than it could be imported. Because glassmakers in England were doing very well, the opportunity cost of their leaving for the uncertainty of a new and dangerous land was too great. Countries that exported large amounts of glass were better places to recruit workers. Among the early settlers in Virginia in the summer of 1608 were eight Germans and Poles for the glassmaking industry. Some glass was produced, but the enterprise was short lived. Workers had little time to devote to their industry because they were too busy trying to survive. When the newly appointed governor of Virginia arrived on May 24, 1610, with 150 new colonists, only 60 survivors remained. Ninety percent of the colonists had died, and with them, America's first industry.

THINK CRITICALLY

Devise an economic theory that could have guided the Virginia Company's decision to begin a colony in the New World. What questions and variables might these entrepreneurs have considered? What might their assumptions have been? What might their hypotheses have been?

1 Chapter Assessment

Summary

1.1 The Economic Problem

a Economic choices are necessary because of our unlimited desires and the scarce supply of productive resources available to satisfy them. There are three basic types of productive resources. *Human resources* is the broad category of human efforts, both physical and mental, used to produce goods and services. *Natural resources* are so-called "gifts of nature." Natural resources can be divided into renewable resources and exhaustible resources. *Capital resources* commonly include all human creations used to produce goods and services.

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b Both goods and services are able to satisfy human desires but goods can be seen, felt, and touched while services cannot. Goods and services are scarce if their price exceeds zero. Because goods and services are produced using scarce resources, they are themselves scarce. Goods or services that are truly free are not a concern of economics.

1.2 Economic Theory

a Economic theories, or economic models, are simplifications of economic reality that are used to make predictions about the real world. When economic theories are constructed, they are based on simplifying assumptions that include *other things being equal and rational self-interest*.

b Some economic statements involve facts that can be proven right or wrong. These are *positive statements*. Other statements that are based on individual opinion cannot be proven right or wrong and are *normative statements*.

c Economic choice usually involves a change in the status quo. The only relevant factors are the benefits and costs resulting from that change. Focusing on the effects of a change to the status quo is called *marginal analysis*. A rational decision maker will change the status quo as long as the expected marginal benefit from the change exceeds the expected marginal cost.

d *Markets* are the means by which buyers and sellers carry out exchange. By bringing together the two sides of exchange, demand and supply, markets determine price and quantity.

e Economics can be seen from two perspectives. *Market economics* concerns how choices by individuals determine the price and quantity in particular markets. *National economics* focuses on the condition of the economy as a whole. There are four participants in the economy: *households, firms, governments,* and *the rest of the world*.

f An economic system can be represented by a circular-flow diagram that includes households, firms, resource markets, and product markets. There are flows of goods, services, and resources that move in one direction through this model, and flows of money that move in the opposite direction.

1.3 Opportunity Cost and Choice

a Whenever an economic decision is made, an *opportunity cost* is paid. Opportunity cost is the value of the best alternative to a choice that is made. It is often impossible to know the true value of a choice that is not made. Decisions are based on the *expected* opportunity cost of a choice.

b Opportunity costs of a decision vary with circumstances. Calculating the value of an opportunity cost requires time and information. Time is the ultimate limiting factor that forces even the very wealthy to make choices.

c Sunk costs have already been paid and should not be considered when you make economic decisions.

d Many choices involve both direct and indirect opportunity costs. The decision to attend college, for example, requires spending funds that could be used for other purposes as well as forgoing income that could have been earned from other uses of scarce time.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer.

_____ **1.** An item you can see, feel, and touch that requires scarce resources to produce and satisfies human wants

_____ **2.** The means by which buyers and sellers carry out exchange

_____ **3.** The broad category of human efforts, both physical and mental, used to produce goods and services

_____ **4.** The value of the best alternative passed up for the chosen item or activity

_____ **5.** The study of how people use their scarce resources to satisfy their unlimited wants

_____ **6.** All human creations used to produce goods and services

_____ **7.** Something not physical that requires scarce resources to produce and satisfies human wants

_____ **8.** A profit-seeker who develops a new product or process and assumes the risk of profit or loss

_____ **9.** So-called "gifts of nature" used to produce goods and services

_____**10.** Incremental, additional, extra, or one more; refers to a change in an economic variable, a change in the status quo.

a. capital goods
b. economics
c. entrepreneur
d. good
e. human resources
f. marginal
g. market
h. natural resources
i. opportunity cost
j. service

Review Economic Concepts

11. True or False *Scarcity* exists because our supplies of *productive resources* are limited.

12. Which of the following is not an example of a *natural resource*?

a. lumber used to build a house
b. a tree standing in a forest
c. a carpenter who installs new cabinets
d. gasoline you put in your car

13. A(n) __?__ is a person who tries to earn a profit by dreaming up a new product or finding a better way to produce an existing one.

14. When a firm's revenue from sales exceeds its costs of production, it will earn a(n) __?__.

15. True or False *Services* are different from *goods* because they are not able to satisfy human desires.

16. Which of the following is an exhaustible resource?

a. crude oil in the ground
b. corn growing in a field
c. water in the ocean
d. fish in the ocean

17. True or False When you play football in a public park you receive a *free good* because you do not pay to use the park.

18. A(n) __?__ is a simplification of economic reality that is used to make predictions about the real world.

19. When economists use the *other-things-constant assumption* they are trying to
    a. consider only variables that interest them.
    b. duplicate reality in their ideas.
    c. establish economic laws that will last indefinitely.
    d. combine several ideas into one.

20. **True or False** In general, the assumption of *rational self-interest* means that individuals try to maximize the expected benefit achieved with a given cost.

21. __?__statements concern what is.

22. **True or False** The assumption of *rational self-interest* rules out concerns for others.

23. Which of the following is a *normative statement*?
    a. On average, Rose works 30 hours a week.
    b. Rose is paid $8.00 per hour for her labor.
    c. Rose pays 7.65 percent of her earnings in Social Security tax.
    d. Rose's hourly pay is too low.

24. **True or False** Most of the disagreement among economists involves debates over *positive statements.*

25. A rational decision maker will change the status quo as long as the expected __?__ benefit from the change exceeds the expected __?__ cost.

26. Which of the following is an example of *market economics*?
    a. Tyrone received a 5 percent raise in his wage last year.
    b. On average, prices in the economy increased by 2.3 percent last year.
    c. The federal government borrowed more than $100 billion last year.
    d. U.S. businesses invested 3.1 percent more last year than in the year before.

27. **True or False** *Opportunity cost* is the value of the best alternative that you pass up when you make a choice.

28. Which of the following is Yo-chee's opportunity cost of spending $8 to go to a movie with her friends?
    a. the value of the $8 she spent
    b. the value of the time she worked to earn the $8
    c. the value of the enjoyment she received from seeing the movie
    d. the value of the pizza she would have bought if she had not gone to the movie

29. **True or False** If you have nothing better to do when you make a choice, there is no opportunity cost of your decision.

30. **True or False** The value of the opportunity cost of a particular choice is the same for all people.

31. Which of the following would not be a possible opportunity cost of attending college?
    a. other uses of the money used to pay college tuition
    b. other uses of the time used to study and attend classes
    c. other uses of extra income earned because of the college education
    d. other uses of the money used to pay for room and board while attending college

32. **True or False** The opportunity cost you would incur for cleaning your room would probably be different on Saturday evening than on Tuesday afternoon.

33. Which of the following is a *sunk cost* that should be ignored when deciding whether or not to buy a new computer over the Internet?
    a. the $50 delivery charge
    b. the $30 monthly payment you already agreed to make to connect to the Internet
    c. the extra $200 you might pay to get a flat-screen monitor
    d. the $150 two-year service contract you could decide to buy

Apply Economic Concepts

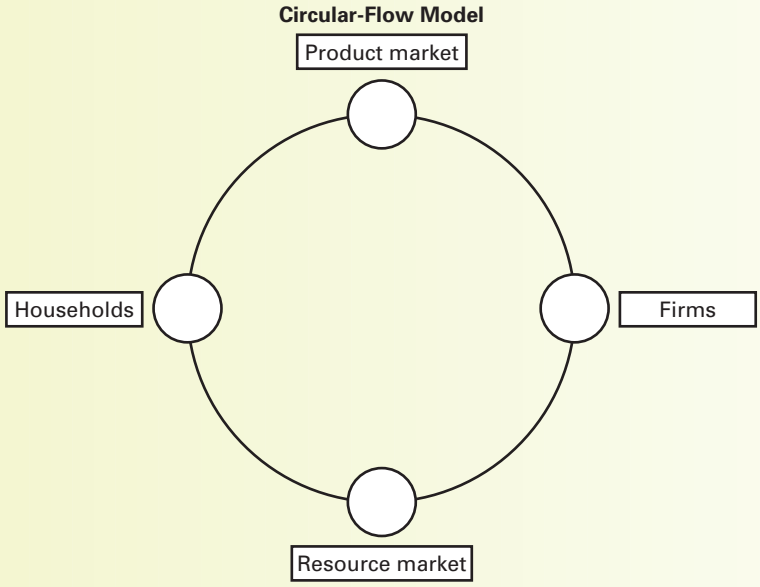
34. Circular-Flow Model Sketch a copy of the circular-flow model shown below on your own paper. Place each of the following in the correct location on your model.

a. Brad has a pizza delivered as he watches Monday-night football.

b. The Sony Corporation produces a new TV.

c. Brad works at a local drugstore.

d. Brad buys a new TV from a Sears store.



35. Opportunity Cost Your uncle has offered to buy you either a new computer or a good-quality bicycle as a graduation present. The prices of both items are the same. Write an essay that identifies which gift you would choose and describes the opportunity cost that would result from your choice. Why might other people make a different choice?

36. Productive Resources List the steps that need to be taken to produce a loaf of bread. Identify examples of each type of productive resource used in this process.

37. Sharpen Your Skills: Cause and Effect The owners of a bakery found they had more customers who wanted to buy their bread and cakes than they could serve. As a result they decided to expand the size of their business and employ twice as many workers. How does this example demonstrate cause and effect? What additional resources would the business require in order to increase its production?

e-con @pps thomsonedu.com/school/econxtra

38. Access **EconNews Online** at thomsonedu.com/school/econxtra. Click on e-con@pps and then click on the policy debate entitled "Are Americans Overworked?" Read the three quotations under "Issues and Background." If the fundamental human resource is "time," do you think it is a benefit or a problem for the U.S. economy that Americans are working more than ever before? Justify your answer with facts from the web site.

2 Economic Systems and Economic Tools

2.1 Economic Questions and Economic Systems

2.2 Production Possibilities Frontier

2.3 Comparative Advantage



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CONSIDER

Can you actually save time by applying economic principles to your family chores?

Why are economies around the world becoming more market oriented?

How much can an economy produce with the resources available?

Why is experience a good teacher?

Why is fast food so fast?

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2.1 Economic Questions and Economic Systems

Objectives

- Identify the three questions that all economic systems must answer.
- Describe a pure market economy, and identify its problems.
- Describe a pure command economy, and identify its problems.
- Compare mixed, market, transitional, and traditional economies.

Overview

What should the economy produce? How should this output be produced? For whom should it be produced? More than 200 countries around the world attempt to answer these three economic questions, all using somewhat different economic systems. One way to distinguish among economic systems is to focus on the role of government. Imagine a range from the most free to the most government-controlled economic system. A ***pure market economy*** stands at one end of the range, and a ***pure command economy*** stands at the other. Although no economy in the world reflects either extreme in its pure form, knowing the features and problems of each extreme will help you understand differences around the world.

Key Terms

economic system

pure market economy

pure command economy

mixed economy

market economy

transitional economy

traditional economy

In the News

The Socialist Market Economy

Twenty-seven new nations were created following the collapse of communism in Eastern Europe. These nations moved from communism to capitalism, experiencing various degrees of success with their transitions. A recently published World Bank study of these new nations shows that the Eastern European countries that have been most successful in converting to a market economy have more open trade policies with Western Europe. Those nations struggling economically tend to trade with Russia. Domestic reforms—or "inside the border" changes—such as the promotion of competition, fighting corruption, and reforming government also are characteristics of the most successful countries. However, Professor Jim Rollo of the University of Sussex argues that all of the nations need to continue to press for reforms. According to Rollo, "The key is good governance, which makes economic growth possible."

THINK ABOUT IT

Several countries such as Croatia and Bulgaria have opened up their trade policies but have been less forthcoming with domestic reforms. Why do you think trading with other countries would be easier to accomplish than "inside the border" changes? Why haven't 15 years been enough to completely transform these economies?

Sources: Svetla Dimitrova, "World Bank Report Urges SEE Countries to Accelerate Trade Reforms," *Southeast European Times,* March 13, 2006; Sharon Norris, "A Europe Still Divided?" *ESRC Society Today,* Economic & Social Research Council, 2006

The Three Economic Questions

All economies must answer three questions:

1. What goods and services will be produced?
2. How will they be produced?
3. For whom will they be produced?

economic system
The set of mechanisms and institutions that resolves the *what, how,* and *for whom* questions for an economy

An **economic system** is the set of mechanisms and institutions that resolves the ***what, how,*** and ***for whom*** questions. Some standards used to distinguish among economic systems are

1. Who owns the resources?
2. What decision-making process is used to allocate resources and products?
3. What types of incentives guide economic decision makers?

What Goods and Services Will Be Produced?

Most people take for granted the many choices that go into deciding what gets produced—everything from which new kitchen appliances are introduced and which novelists get published, to which roads are built. Although different economies resolve these and millions of other questions using different decision-making rules and mechanisms, all economies must somehow decide what to produce.

How Will Goods and Services Be Produced?

The economic system must determine how output is to be produced. Which resources should be used, and how should they be combined to make each product? How much labor should be used and at what skill levels? What kinds of machines should be used? What type of fertilizer grows the best strawberries? Should a factory be built in the city or closer to the interstate highway? Millions of individual decisions determine which resources are employed and how these resources are combined.

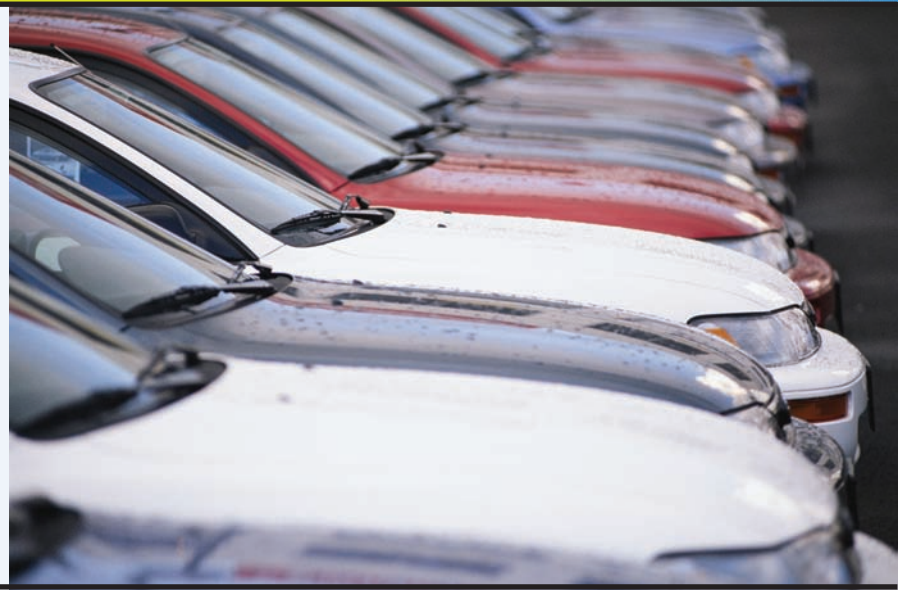
For Whom Will Goods and Services Be Produced?

Who will actually consume the goods and services produced? The economic system must determine how to distribute the fruits of production among the population. Should equal amounts be provided to everyone? Should those will-

Main Idea

Allocation of Goods and Services

An economic system determines how the three economic questions are answered to allocate goods and services in an economy. **The three economic questions are closely interwoven. Why does the answer to one question depend so much on the answers to the other questions? Apply your answer to the automobile industry. How does what automobiles are produced relate to how they will be produced and for whom they will be produced?**



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ing to wait in line the longest get more? Should goods be allocated according to height? Weight? Religion? Age? Gender? Race? Looks? Strength? Political connections? The value of resources supplied? The question "For whom will goods and services be produced?" often is referred to as the distribution question.

Interdependent Questions

The three economic questions are closely interwoven. The answer to one depends very much on the answers to the others. For example, an economy that distributes goods and services in uniform amounts to all will, no doubt, answer the what-will-be-produced question differently from an economy that allows each person to choose goods and services.

✓ CHECKPOINT

What three questions must all economic systems answer?

Pure Market Economy

In a **pure market economy**, private firms account for all production. There is no government involvement at all. Features of this economic system include the private ownership of all resources and the coordination of economic activity based on the prices generated in free, competitive markets. Any income derived from selling resources goes exclusively to the resource owners.

The Invisible Hand of Markets

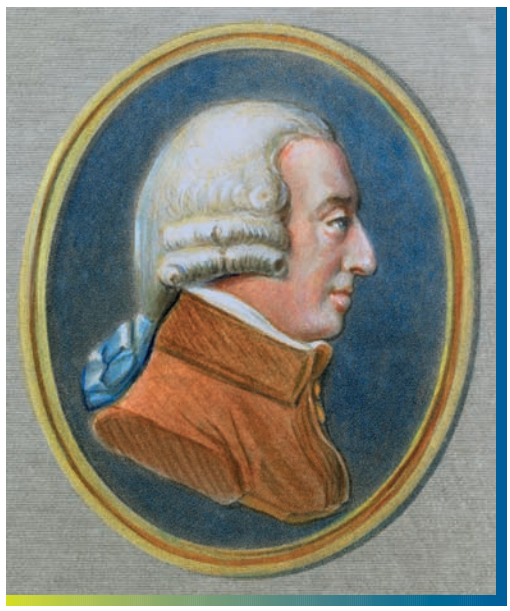
Resource owners have ***property rights*** to the use of their resources and are free to supply those resources to the highest bidder. Producers are free to make and sell whatever they believe will be profitable. Consumers are free to buy whatever they can afford. All this voluntary buying and selling is coordinated by competitive markets that are free from any government regulations.

Market prices guide resources to their most productive use and channel goods to those consumers who value them the most. Markets answer the ***what, how,*** and ***for whom*** questions. Markets transmit information about relative scarcity, provide incentives to producers and consumers, and distribute income among resource owners.

No single individual or small group coordinates these activities. Rather, the voluntary choices of many buyers and sellers responding only to their individual incentives direct resources and products to those who value them the most.

According to Adam Smith (1723–1790), market forces coordinate production as if by an "invisible hand." Smith argued that ***although each individual pursues his or her self-interest, the "invisible hand" of market competition promotes the general welfare.*** Voluntary choices in competitive markets answer the questions ***what, how,*** and ***for whom.***

Adam Smith



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Problems with Pure Market Economies

A pure market economy offers resource owners the freedom and the incentive to get the most from their resources. However, a pure market economy has its flaws because markets do not always work well on their own. The most notable ***market failures*** include

1. **Difficulty Enforcing Property Rights** Market activity depends on people using their scarce resources to maximize their satisfaction. However, what if you were repeatedly robbed of your paycheck on your way home from work? What if, after you worked a week in a new job, your employer refused to pay you? Why bother working? Private markets would break down if you could not safeguard

pure market economy

An economic system with no government involvement so that private firms account for all production

your private property or if you could not enforce contracts. In a pure market economy, there is no government, so there is no central authority to protect property rights, enforce contracts, and otherwise ensure that the rules of the game are followed.

2. **Some People Have Few Resources to Sell** Because of a poor education, disability, discrimination, the time demands of caring for small children, or bad luck, some people have few resources to sell in a market economy. Because markets do not guarantee even a minimum level of income, some people would have difficulty surviving.

3. **Some Firms Try to Monopolize Markets** Although the "invisible hand" of market competition usually promotes the general welfare, some producers may try to monopolize the market by either unfairly driving out competitors or by conspiring with competitors to increase prices. With less competition, firms can charge a higher price to earn more profit. Thus, firms have a profit incentive to monopolize a market.

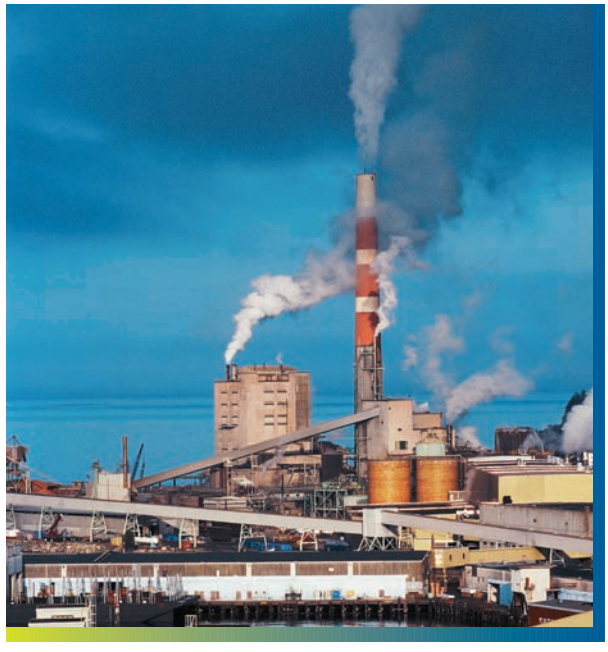
4. **No Public Goods** Private firms do not produce so-called ***public goods,*** such as national defense. Once produced, public goods are available to all, regardless of who pays and who does not pay for them. Suppliers cannot easily prevent those who fail to pay for a public good from benefiting from the good. For example, reducing terrorism benefits all in the economy. Because firms cannot sell public goods profitably, public goods are not produced in a pure market economy.

5. **Externalities** Market prices reflect the benefits to buyers and the costs to sellers. However, some production and consumption affect third parties—those not directly involved. For example, a paper mill fouls the air breathed by local residents, but the market price of paper fails to reflect such costs. Because the pollution costs are outside—or external to—the market transaction, they are called ***externalities.*** Private markets fail to account for externalities. Because of this type of market failure, even market economies allow a role for government.

✓ CHECKPOINT

What is a pure market economy, and what are its problems?

Air pollution from a paper mill affects the health of local residents. Why does the market system fail to account for such problems? How can such problems be solved for a society?



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Pure Command Economy

In a **pure command economy**, all resources are government-owned, and production is coordinated by the central plans of government officials. At least in theory, there is public, or ***communal,*** ownership of all resources. That is why a command economy is sometimes called ***communism.*** Central planners answer the three economic questions by spelling out how many missiles, how many homes, and how much bread to produce. Central planners also decide how to produce these goods and who should get them.

The Visible Hand of Central Planners

Rather than rely on competitive markets, central planners direct the allocation of resources and products. Central planners may believe that market economies produce too many consumer goods and too few capital goods, especially military hardware. They also may believe that central planning yields a fairer distribution of goods across households than a market economy does.

In a pure command economy, the central authority, or state, controls all resources, including labor. Central planners direct production through state-run enterprises, which usually face no competition. Some goods and services are ***rationed,*** meaning that each household gets a certain amount. For example, each household gets so many square feet of living space. Other products are allocated based on prices set by central planners. Prices, once set, tend to be inflexible.

In short, market economies coordinate production through the invisible hand of market competition. Command economies use the visible hands of central planners.

Problems with Command Economies

A pure command economy ideally produces the combination of products that society desires. But this economic system has serious flaws.

Most notable are the following five failures. Because of these flaws, countries have modified command economies to allow a greater role for private ownership and market competition.

1. **Consumers Get Low Priority** Central plans may reflect the preferences of central planners rather than those of consumers. Central planners decide what gets produced and who should consume the goods. When goods are rationed or offered for an inflexible price, severe shortages can result. Evidence of a consumer goods shortage includes empty store shelves, long waiting lines, and the "tips"—or bribes—shop operators expect for supplying scarce goods.
2. **Little Freedom of Choice** Because central planners are responsible for all production decisions, the variety of products tends to be narrower than in a market economy. Households in command economies not only have less choice about what to consume, but they also have less freedom in other economic decisions. Government planners may decide where people live and where they work.
3. **Central Planning Can Be Inefficient** Running an economy is so complicated that central planners often end up directing resources inefficiently. Consider all that's involved in growing and distributing farm products. Central planners must decide what to grow, what resources to employ (who, for example, should become farmers), and who gets to consume the harvest (should it be rationed or sold for a set price). Mistakes along the way result

pure command economy
An economic system in which all resources are government-owned and production is coordinated by the central plans of government

NET Bookmark

The *CIA World Factbook* provides brief descriptions of all the world's economies. Access this web site through thomsonedu.com/school/econxtra. Choose one country and identify its economy. Write a paragraph explaining the characteristics of this country's economy.

thomsonedu.com/school/econxtra

in inefficiencies and waste. For example, the former Soviet Union had a command economy. About one-third of the harvest there reportedly rotted on its way to consumers.

4. **Resources Owned by the Central Authority Are Sometimes Wasted** Because resources are owned by the central authority, or government, nobody in particular has an incentive to see that resources are employed in their highest-valued use. Some resources are wasted. For example, Soviet workers usually had little regard for government equipment. Workers would dismantle new trucks or tractors for parts, or send working equipment to scrap plants. Workers' stealing government property, though a serious crime, also was a common practice. In contrast to the lack of regard for government property, Soviet citizens took extremely good care of their personal property. For example, personal cars were so well maintained that they lasted more than 20 years on average—twice the official projected life of an automobile.

5. **Environmental Damage** In theory, a command economy, with its focus on "the common good," should take better care of the environment than a market economy. In practice, however, directors of state enterprises often are more concerned with meeting the production goals set by the central planners. For example, in its drive for military dominance, the former Soviet government set off 125 nuclear explosions ***above*** ground. The resulting bomb craters filled with water, forming contaminated lakes. Thousands of barrels of nuclear waste were dumped into Soviet rivers and seas.

mixed economy
An economic system that mixes central planning with competitive markets

market economy
Describes the U.S. economic system, where markets play a relatively large role



The United States is a mixed economy, containing features of both a market economy and a command economy. This textbook gives many examples of the central planning role of government in the U.S. economy. In small groups, brainstorm and list evidence of how the United States is a market economy. Compare your groups' results in class.

✓ CHECKPOINT

What is a pure command economy, and what are its problems?

Mixed, Transitional, and Traditional Economies

No country on earth represents either a market economy or command economy in its pure form. Economic systems have grown more alike over time. The role of government has increased in market economies, and the role of markets has increased in command economies. As a result, most economies now mix central planning with competitive markets and are called **mixed economies**.

Mixed Economy

The United States is a mixed economy. Because markets play a relatively large role, it also is considered a **market economy**. Government accounts for about one-third of all U.S. economic activity.

Government also regulates the U.S. private sector in a variety of ways. For example, local zoning boards determine lot sizes, home sizes, and the types of industries allowed. Federal bodies regulate workplace safety, environmental quality, competition in markets, and many other activities.

Although both ends of the economic spectrum have moved toward the center, the market system has gained more converts in recent decades. Consider countries that have been cut in two by political and economic ideology. In such

cases, the economies began with similar resources and income levels right after the split. Over time the market-oriented economies produced a much higher standard of living than the command economies. For example, income per capita in Taiwan, a market-oriented economy after it split from China, averages about four times that of China, a command economy. As another example, income per capita in market-oriented South Korea is about 11 times that of North Korea, perhaps the most centrally planned economy in the world.

Recognizing the power of markets to create incentives and provide information about scarcity, even some of the most diehard central planners now reluctantly accept some market activity. For example, about 20 percent of the world's population lives in China, which grows more market oriented each day. The former Soviet Union dissolved into 15 independent republics. Most are now trying to introduce more market incentives. Even North Korea has opened special economic zones where market forces are allowed to operate with less government interference.

Transitional Economy

More than two dozen countries around the world are **transitional economies**, in the process of shifting orientation from command economies to market economies. This transition involves converting government enterprises into private enterprises. This is a process called *privatization*. Altogether more than 150,000 large enterprises are trying to grow more competitive. Most of these enterprises have become more efficient and more productive. From Hungary to Mongolia, the transition now under way will shape economies for decades to come.

transitional economy

An economic system in the process of shifting from central planning to competitive markets

ETHICS IN ACTION

Stealing Digital Property

The U.S. government works diligently to protect the property rights of its citizens. One of the major issues in providing this protection concerns how to handle piracy and "bootlegging" in the software, music, and movie industries. Recently the Recording Industry Association of America (RIAA) successfully sued Napster, a pioneer of free music-swapping online, for copyright infringement. The suit ultimately resulted in the defendant's bankruptcy. Now the Motion Picture Association of America (MPAA), along with a group of sympathetic U.S. senators and representatives, is promoting a wide-ranging "get tough" stance with movie bootlegging. This drive includes tougher penalties for individuals caught videotaping movies in theaters. It also includes threatening the governments of other nations, such as Canada and Russia, with significant economic sanctions if they don't crack down on bootlegging within their boundaries. The state and national governments being forced into this campaign have fought against it mainly because of the additional expenses involved and the need to divert law enforcement resources being used elsewhere. Critics of this "get tough" campaign have argued that if the movie industry would lower its prices, people's desire to bootleg would decrease. Without such an action, people will not stop copying from their friend's music, film, and software collections, or downloading from the Internet.

THINK CRITICALLY

Explain the basic ethical problem with the critics' argument.

Sources: David B. Caruso "MPAA Pushes for Tougher Bootlegging Laws," *Associated Press*, December 8, 2005; David Shabelman, "Napster Lives But Challenges Loom," *The Deal*, January 27, 2006.

Traditional Economy

traditional economy
An economic system shaped largely by custom or religion

Finally, some economic systems, known as **traditional economies**, are shaped largely by custom or religion. For example, caste systems in India restrict occupational choice. Charging interest is banned under Islamic law. Family relations also play significant roles in organizing and coordinating economic activity.

Even in the United States some occupations still are dominated by women, and others by men, largely because of tradition. Your own pattern of consumption and choice of occupation may be influenced by some of these forces.

✓ CHECKPOINT

Compare mixed, market, transitional, and traditional economies.

Assessment 2.1

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Key Concepts

1. Compare the answers to the three basic economic questions in a pure market economy with the answers to these questions in a pure command economy. Present your answers using a spreadsheet or grid.
2. What did Adam Smith mean when he talked about an "invisible hand" that guides production in market economies?
3. Why are property rights important to the efficient working of a market economy?
4. What problems are likely to occur in command economies?
5. Why is the U.S. economic system sometimes called a "mixed market economy"?

Graphing Exercise

6. Draw a horizontal line. Label the left side of the line "Pure Market Economy" and the right side, "Pure Command Economy." Place each of the following nations on your line at a place that you think accurately represents the current state of its economy: United States, China, North Korea, Sweden, Russia, Mexico. Research the economies of the countries not familiar to you. Be prepared to explain your placements.

Think Critically

7. **Government** When governments decide how to spend money, they often behave in a way similar to command economies. Investigate an important spending decision made by your local government. Write a one-page paper that identifies problems that were encountered that have been common in command economies.

2.2 Production Possibilities Frontier

Objectives

- Describe the production possibilities frontier, and explain its shape.
- Explain what causes the production possibilities frontier to shift.

Overview

How much can the economy produce in a particular period if resources are used efficiently? In reality, an economy, such as the U.S. economy, has millions of different resources that can be combined in all kinds of ways to produce millions of possible goods and services. A simple model is used to describe the economy's production possibilities.

Key Terms

production possibilities frontier (PPF)

efficiency

law of increasing opportunity cost

economic growth

In the News

Paying at the Pump for Supply Interruptions

Americans are the world's leading consumers of oil. In the United States there are nearly 150 refineries producing about 80 percent of the nation's gasoline needs. Overseas refineries provide the rest. While the country's refining capacity has stabilized recently, capacity over the long term has declined as outdated and marginally profitable refineries were closed. Since 1976 no new refineries have been built in the United States although some have increased production capacity by improving technology or expanding. For many local residents, the opportunity cost of a new refinery is a lower quality of life. While gasoline typically makes up 45 percent of the refineries' output, the refineries also produce other products such as kerosene, diesel fuel, lubricating oil, heavy gas, and residential heating oil. To meet changing demand, refineries can shift the mix of products they produce. For example in the fall after gasoline demand has peaked, refineries emphasize the production of heating oil for winter use. By the spring they turn again to gasoline in order to meet the peak summer driving season. However, unforeseen disruptions can severely limit production. For example, when Hurricane Katrina hit the Gulf Coast, it destroyed 15 percent of U.S. refining capacity.

THINK ABOUT IT

In what direction did the production possibilities frontier (PPF) move after Hurricane Katrina destroyed the refineries? What do you think is the major opportunity cost preventing the country from increasing production by building new oil refineries?

Sources: "Gasoline" Newsroom, ConocoPhillips, www.conocophillips.com/newsroom; "Refining," Energy Information Agency, Department of Energy, www.eia.doe.gov.

Efficiency and the Production Possibilities Frontier

production possibilities frontier (PPF)
Shows the possible combinations of the two types of goods that can be produced when available resources are employed efficiently

efficiency
Producing the maximum possible output from available resources

How much can an economy produce with the resources available? What are the economy's production capabilities? To help consider these questions, you need a simple model of the economy, beginning with some simplifying assumptions.

Simplifying Assumptions

Here are the model's simplifying assumptions:

1. To reduce the analysis to manageable proportions, the model limits output to two broad classes of products: consumer goods, such as pizzas and haircuts, and capital goods, such as pizza ovens and hair clippers.
2. The focus is on production during a given period—in this case, a year.
3. The resources available in the economy are fixed in both quantity and quality during the period.
4. Society's knowledge about how best to combine these resources to produce output—that is, the *technology*—does not change during the year.

The point of these assumptions is to freeze the economy's resources and technology for a period of time to focus on what possibly can be produced during that time.

PPF Model

Given the resources and the technology available in the economy, the **production possibilities frontier (PPF)** shows the possible combinations of the two types of goods that can be produced when available resources are employed efficiently. **Efficiency** means producing the maximum possible output from available resources.

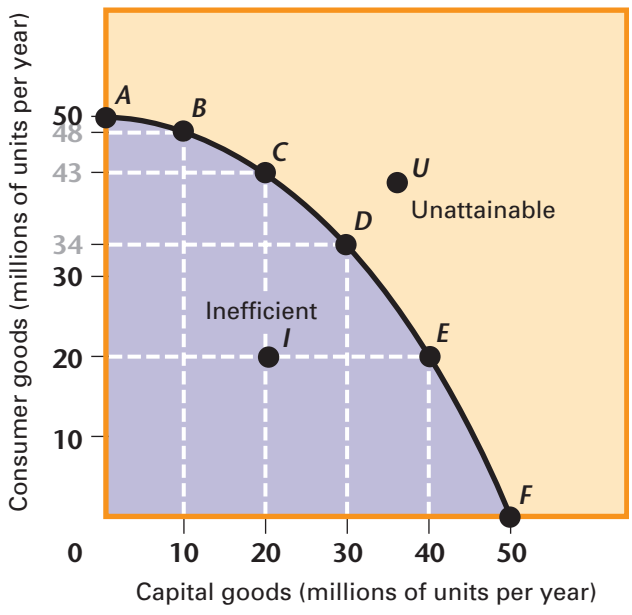
The economy's PPF for consumer goods and capital goods is shown by the curve *AF* in Figure 2.1. Point *A* identifies the amount of consumer goods produced per year if all the economy's resources are used efficiently to produce consumer goods. Point *F* identifies the amount of capital goods produced per year if all the economy's

The Graphing Workshop

Production Possibilities Frontier (PPF) — **Figure 2.1**

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If the economy uses its available resources and technology efficiently in producing consumer goods and capital goods, it will be on its production possibilities frontier AF. The PPF is bowed out to illustrate the law of increasing opportunity cost: Additional units of capital goods require the economy to sacrifice more and more units of consumer goods. More consumer goods must be given up in moving from D to E than in moving from A to B, although in each case the gain in capital goods is 10 million units. Points inside the PPF, such as I, represent inefficient use of resources. Points outside the PPF, such as U, represent unattainable combinations.



resources are used efficiently to produce capital goods.

Points along the curve between ***A*** and ***F*** identify possible combinations of the two goods that can be produced when the economy's resources are used efficiently. Resources are employed efficiently when there is no change that could increase the production of one good without decreasing the production of the other good.

Inefficient and Unattainable Production

Points inside the PPF, including ***I*** in Figure 2.1, represent combinations that do not employ resources efficiently. Note that point ***C*** yields more consumer goods and no fewer capital goods than point ***I.*** Point ***E*** yields more capital goods and no fewer consumer goods than point ***I.*** In fact, any point along the PPF between ***C*** and ***E,*** such as point ***D,*** yields both more consumer goods and more capital goods than ***I.*** So point ***I*** is ***inefficient.*** By using resources more efficiently, the economy can produce more of at least one good without reducing the production of the other good.

Points outside the PPF, such as ***U*** in Figure 2.1, represent unattainable combinations, given the resources and the technology available. Thus ***the PPF not only shows efficient combinations of production but also serves as the border between inefficient combinations inside the frontier and unattainable combinations outside the frontier.***

The Shape of the PPF

Any movement along the PPF involves giving up some of one good to get more of the other. Movement down the curve indicates that the opportunity cost of more capital goods is fewer consumer goods. For example, moving from point ***A*** to point ***B*** increases the amount of capital goods produced from none to 10 million units and reduces production of consumer goods from 50 million to 48 million units, a decline of only 2 million units. Increasing production of capital goods to 10 million units causes the production of consumer goods to fall only a little. Capital production initially employs resources (such as road graders used to build highways) that add little or nothing to production of consumer goods but are quite productive in making capital goods.



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Study the two images and decide which one represents capital goods and which one represents consumer goods. If these goods were represented on a PPF, what would happen to the production of one type of good if the production of the other good increased?

e-conomics

A GROWING WEB

"The Internet is a total reversal of what Wall Street expected," says analyst Steven Vonder Haar of Interactive Media Strategies. "It delivers tailored and personalized services instead of entertainment and broadcast programming. In a word, it's practical." During the "dot-gone" era ending the 1990s, nearly 1,000 Internet companies that promised to greatly simplify our lives—such as Webvan, Furniture.com, and Pets.com—went belly-up and folded. However in the last few years, the trend has reversed as the lessons relating to both success and failure from the Net's early days have been learned. Companies savvy about the expectations of Internet consumers are now profitably marketing almost every product imaginable, from cars to home improvement goods, over the Web. As a consequence, estimated Internet sales have risen dramatically not only in the United States but around the world. In the United Kingdom, for example, Internet sales in 2004 were up 81 percent over 2003's totals. Figures released by the U.S. Department of Commerce showed that during 2005 Internet sales in the United States increased almost 25 percent from 2004.

THINK CRITICALLY

What effect do you think success of Internet commerce will have on the production possibilities frontier? Explain your answer.

Source: Jon Swartz, *USA Today,* November 18, 2002.

law of increasing opportunity cost

Each additional increment of one good requires the economy to give up successively larger increments of the other good

As shown by the dashed lines in Figure 2.1, each additional 10 million units of capital goods reduces consumer goods by successively larger amounts. As more capital goods are produced, the resources drawn away from consumer goods are those that are increasingly better suited to making consumer goods and less suited to making capital goods. ***The resources in the economy are not all perfectly adaptable to the production of both types of goods. Therefore, the opportunity cost of capital goods increases as the economy produces more capital goods and fewer consumer goods.***

The shape of the production possibilities frontier reflects the law of increasing opportunity cost. If the economy uses all resources efficiently, the **law of increasing opportunity cost** states that each additional increment of one good requires the economy to give up successively larger increments of the other good.

The PPF has a bowed-out shape due to the law of increasing opportunity cost. For example, whereas the first 10 million units of capital goods have an opportunity cost of only 2 million consumer goods, the final 10 million capital goods—that is, the increase from point *E* to point *F*—have an opportunity cost of 20 million consumer goods. As the economy moves down the curve, the curve becomes steeper, reflecting the higher opportunity cost of capital goods in terms of forgone consumer goods.

The Graphing Workshop

The law of increasing opportunity cost also applies when moving from the production of capital goods to the production of consumer goods. When all resources in the economy are making capital goods, as at point *F,* certain resources, such as cows and farmland, are of little use in making capital goods. Thus, when resources shift from making capital goods to making consumer goods, few capital goods need be given up initially. As more consumer goods are produced, however, resources that are more productive in making capital goods must be used for making consumer

goods, reflecting the law of increasing opportunity cost.

If resources were perfectly adaptable to the production of both types of goods, the amount of consumer goods sacrificed to make more capital goods would remain constant. In this case, the PPF would be a straight line, reflecting a constant opportunity cost along the PPF.

✓ CHECKPOINT

Describe the PPF model, and explain its shape.

Shifts of the PPF

The production possibilities frontier assumes that resources available in the economy and the level of technology remain constant during the period. Over time, however, the PPF may shift as a result of changes in resource availability or in technology. An outward shift of the PPF reflects **economic growth**, which is an expansion of the economy's production possibilities, or ability to produce. The economy's ability to make stuff grows.

Changes in Resource Availability

If the labor force increases, such as through immigration, the PPF shifts outward, as shown in panel (a) of Figure 2.2. If people decide to work longer hours, retire later, or if the labor force becomes more skilled, this too would shift the PPF outward. An increase in the availability of other resources, such as new oil discoveries, also would shift the PPF outward.

In contrast, a decrease in the availability or quality of resources shifts the PPF inward, as shown in panel (b). For example, in 1990 Iraq invaded Kuwait, setting oil fields on fire and destroying much of Kuwait's physical capital. As a consequence, Kuwait's PPF shifted inward. In West Africa, the sands of the Sahara spread and destroy thousands of square miles of productive farmland each year, shifting the PPF of that economy inward.

Increases in Stock of Capital Goods

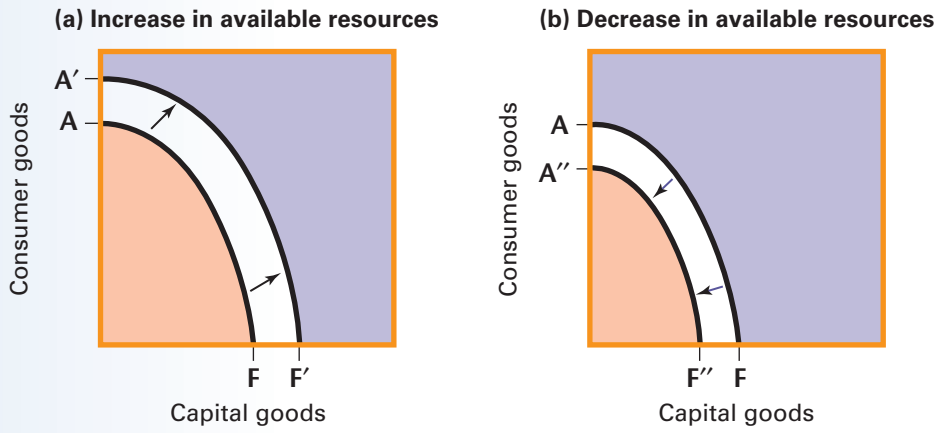
An economy's PPF depends in part on its stock of capital goods. The more capital goods an economy produces during one period, the more output it can produce in the next period. Thus, producing more capital goods this period (for example, by building more factories) shifts the economy's PPF outward the next period.

The choice between consumer goods and capital goods is really between present consumption and future production. Again, the more capital goods produced this period, the greater the economy's production possibilities next period.

economic growth
An expansion of the economy's production possibilities or ability to produce

Shifts of the Production Possibilities Frontier — **Figure 2.2**

When the resources available to an economy change, the PPF shifts. If more resources become available, the PPF shifts outward, as in panel (a), indicating that more output can be produced. A decrease in available resources causes the PPF to shift inward, as in panel (b).



NET Bookmark

USAID is an independent federal agency that administers the government's foreign-assistance programs. These programs generally promote economic growth in the receiving countries, thus expanding their production possibilities frontiers. Access the USAID web site through thomsonedu.com/school/econxtra. Surf the articles under "What's New" or "News Releases" to find specific examples of how USAID is promoting economic growth in specific countries. Then write a paragraph describing one example.

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Technological Change

Another change that could shift the economy's PPF outward is a technological discovery that employs available resources more efficiently. For example, the Internet has increased the efficiency of resource markets by boosting each firm's ability to identify resource suppliers. Such an increase expands the economy's PPF, as shown in panel (a) of Figure 2.2.

Ask the Xpert!

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Have computers affected worker productivity?

Lessons from the PPF

The PPF demonstrates several concepts introduced so far. The first is ***efficiency:*** The PPF describes the efficient combinations of outputs that are possible, given the economy's resources and technology. The second is ***scarcity.*** Given the stock of resources and technology, the economy can produce only so much. The PPF slopes downward, indicating that, as the economy produces more of one good, it must produce less of the other good. This trade-off demonstrates ***opportunity cost.***

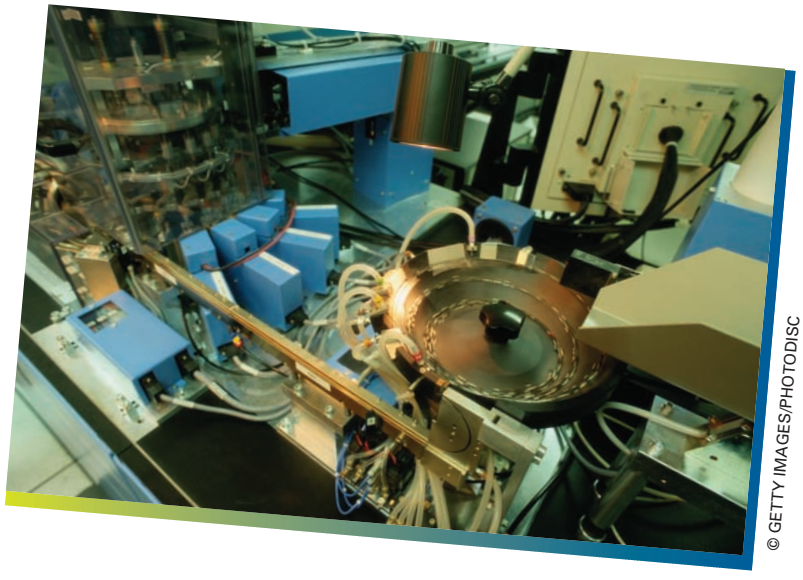
The bowed-out shape of the PPF reflects the ***law of increasing opportunity cost.*** Not all resources are perfectly adaptable to the production of each type of good. A shift outward of the PPF reflects ***economic growth.*** Finally, because society must somehow choose a specific combination of output along the PPF, the PPF also emphasizes the need for ***choice.*** That choice will determine both current consumption and the capital stock available next period.

Each point along the economy's production possibilities frontier is an efficient combination of output. Whether the economy produces efficiently and how the economy selects the most preferred combination depend on the economic system.

✓ CHECKPOINT

What causes the production possibilities frontier to shift?

What happens to the PPF when technological change, such as a change in the way computer chips are manufactured, results in a more efficient production process?



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Assessment 2.2

Key Concepts

1. Explain why each of the following assumptions is made when a production possibilities frontier (PPF) is constructed.
   a. Only two goods or services are considered.
   b. The time considered is limited.
   c. The available resources are fixed in terms of quality and quantity.
   d. The available technology does not change in the time considered.
2. What does a production possibilities frontier for plastic tables and bowling balls identify?
3. What does it mean to say that an economy produces bowling balls efficiently?
4. If an economy that produces bowling balls and plastic tables is operating at a point inside its PPF, how efficiently is it using its resources?
5. Explain why the law of increasing opportunity cost causes PPFs to be bowed-out from the origin (corner) of their graphs.
6. Using consumer goods and capital goods in a production possibilities frontier, what conditions would produce a straight-line PPF? What does this indicate about opportunity cost along the PPF, and why?

Graphing Exercise

7. The nation of Iberia can produce either digital cameras or DVD players in its factory. The more it makes of one product, the less it is able to make of the other. The table to the right shows different combinations of the two products it could manufacture next month. Use these data to construct a production possibilities frontier for this nation (put digital cameras on the vertical axis). Why isn't there a one-for-one trade-off between production of these two products?

Combinations of Digital Cameras and DVD Players Iberia Could Produce

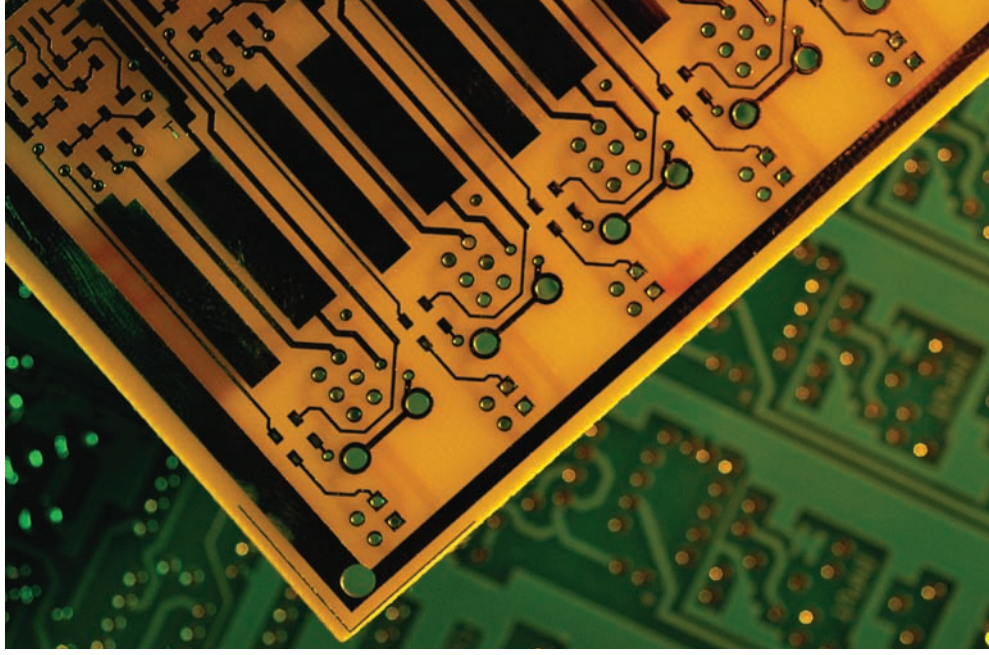
Combination	Digital Cameras	DVD Players
A	0	5,000
B	2,000	4,500
C	3,400	3,400
D	4,500	2,000
E	5,000	0

Think Critically

8. **Math** Consider the table in graphing exercise 7 above. Suppose digital cameras sell on the world market for $300 each, while DVD players sell for $200 each. How much revenue would firms in Iberia get from selling each of the combinations of production indicated on the table? Which combination would maximize revenue from the nation's production?
9. **Government** Why has the federal government passed laws intended to encourage businesses to buy more capital goods? Given time, what should this do to the location of the economy's PPF?

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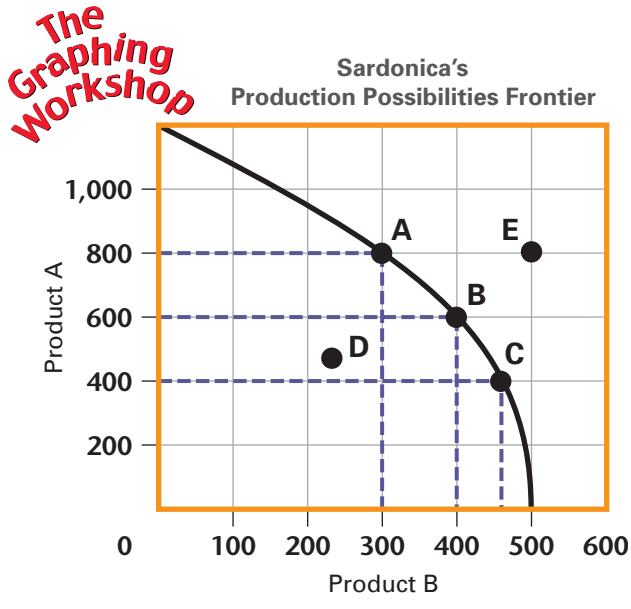
Sharpen Your Skills



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Interpret a Graph

The nation of Sardonica is able to produce either product A or product B from a fixed amount of resources it has each month. It also can produce different combinations of these products. However, for each additional amount of one of these products it produces, it must give up some of the other. Study the graph of Sardonica's production possibilities frontier, and then answer the following questions.



Apply Your Skill

1. If Sardonica produces 800 units of product A, how many units of product B can it make?
2. If Sardonica chooses to produce 400 units of product A instead of 800, roughly how many more units of product B can it make?
3. If Sardonica chooses to produce 500 units of product B instead of 460 of them, why must it give up the production of 400 units of product A?
4. If Sardonica produces combination D on the graph, what can you say about the efficiency of its production?
5. Why isn't Sardonica able to produce at point E given the current situation?

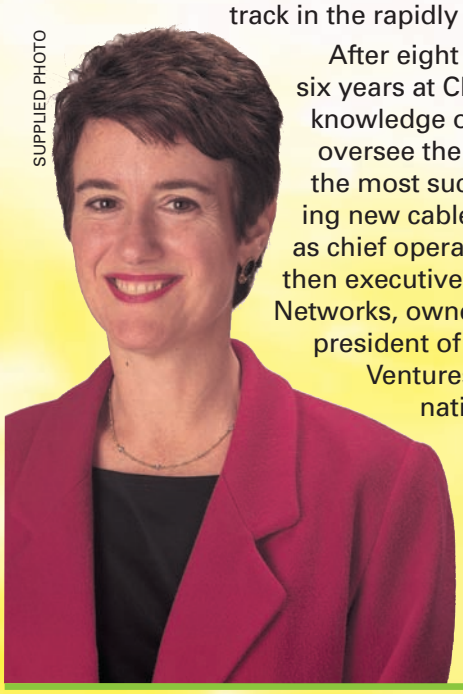
movers & shakers

Susan Packard

President of Scripps Networks New Ventures Affiliate Sales and International Development

Susan Packard began working in cable television at an exciting time. It was 1980, cable television was new, and cable operators were still developing their programs. Their salespeople were busy selling networks into viewer's homes while at the same time finding advertisers who wanted to reach each network's audience.

Packard worked for HBO at that time. She was part of a team that eventually made HBO available to every cable-ready home in the United States. To do her job well, Packard needed to be technically literate, so she climbed poles and learned to distinguish a receiver from a modulator and a head-end. Her willingness to learn kept her career on the fast track in the rapidly growing cable industry.



SUPPLIED PHOTO

After eight years at HBO and then six years at CNBC, Packard took her knowledge of the cable industry to oversee the launch of HGTV—one of the most successful and fastest-growing new cable networks. She served as chief operating officer of HGTV, and then executive vice president of Scripps Networks, owner of HGTV. Today she is president of Scripps Networks New Ventures Affiliate Sales and International Development where her responsibilities include the distribution of Scripps-owned cable networks to cable operators, satellite distributors, and television stations. Packard also is an officer of Scripps Networks, Inc., which includes Home & Garden Television, the Food Network, the Do It Yourself Network, FINE LIVING, and Shop at Home.

Each of these cable networks covers a different category of subjects, but they follow the same model. They package attractive visuals with how-to information aimed at the baby boomer and those with unique lifestyle interests and hobbies. These are audiences that advertisers often find difficult to reach. The networks are successful not only because of the programs they deliver, but because advertisers are eager to spend their money in order to reach these audiences.

Packard credits the meteoric success of these cable networks to the unique categories of programming they deliver to viewers. "We're nonviolent family fare. Everything on our air is TV-G. We appeal to specialized, passionate interests—gardeners, do-it-yourself types, hobbyists, cooks, and decorators, to name a few." Packard's knowledge and decision-making skills also deserve credit. Together they have earned her numerous awards including recognition as one of the "12 Most Powerful Women in Cable" by *Cablevision* magazine, as "One of 12 to Watch" by *Electronic Media,* and as one of the "Top 100" in the cable industry by *CableFax* magazine. Packard is the recipient of the 1998 Woman of the Year Award present ed by Women in Cable & Telecommunications and in 1999 was profiled in *Modern Visionaries,* a book chronicling the contributions of pioneering women in the cable and telecommunications industry. In 2003 she received the Outstanding Alumni Award, the highest honor given by the College of Communications, Arts and Sciences, at Michigan State University.

ENTREPRENEURS IN ACTION

Working in small groups, create a division of labor among five people producing a show about flower gardens. Could this same division of labor be used to produce a show about landscaping a home? Is it more efficient for a cable television network to produce shows about gardening and landscaping, or to produce shows about gardening and scuba diving?

SOURCE READING

Packard states, "We appeal to so many interests—gardeners, do-it-yourself types, hobbyists, and those with special interests." How are these networks incorporating the idea of specialization in ways that major television networks like ABC, NBC, and CBS are not?

Sources: Interview via e-mail; www.scripps.com/ annrpt/99/nofrills/mess/mmain.html; and Cable Center Library/Special Collections/Oral Histories.

2.3 Comparative Advantage

Objectives

- Explain the law of comparative advantage.
- Understand the gains from specialization and exchange.

Overview

The law of comparative advantage helps explain why even a person talented at many things can get more done by specializing. Division of labor allows firms to increase production by having each worker specialize. Specialization occurs not only among individual workers, but also among firms, regions, and entire countries.

Key Terms

absolute advantage

law of comparative advantage

specialization

barter

money

division of labor

In the News

Live Longer with Specialized Care

Research has shown that people who have had a heart attack do better and recuperate faster if they are attended by a cardiac specialist rather than a general practitioner. As reported in the *New England Journal of Medicine,* a Boston research group studied Medicare data from 35,520 patients across the country. Studying a post-hospital time period of two years for the heart attack patients, the researchers found that 14.6 percent of patients with outpatient care from a cardiologist had died. In the same time period, 18.3 percent died while being treated solely by a family doctor, general practitioner, or internist. Reasons suggested for the greater success through specialization include: the patients treated by a cardiac specialist were likely to have received more focused attention, they underwent more medical procedures, and they were provided greater access to rehabilitation techniques.

THINK ABOUT IT

Suggest two gains from specialization for cardiologists who provide medical services to their patients.

Source: "Heart Patients Do Better with Specialized Outpatient Care," *Associated Press*, November, 2002.

Comparative Advantage

You probably are expected to do certain chores at home on a regular basis. What if it is your responsibility to wash the two family cars and mow the lawn each week? It takes you 45 minutes to wash a car and an hour to mow the lawn. Altogether, you spend two and a half hours a week washing two cars and mowing the lawn.

Your high school friend David lives next door. He happens to face the same weekly chores—washing two family cars identical to yours and mowing a lawn identical to yours. David, however, is not nearly as quick as you. It takes him one hour to wash a car and three hours to mow the lawn. Altogether, David spends five hours a week on these chores.

Absolute Advantage

Compared to David, you have an absolute advantage in both tasks, because you can do each using fewer resources. The resource here is your labor time. More generally, having an **absolute advantage** means being able to do something using fewer resources than other producers require.

If you and David each do your own weekly chores, you take two-and-a-half hours and he takes five hours. Because you can complete each task in less time than David can, you see no point in cooperating with him to save time. However, is this the best you can do?

The Law of Comparative Advantage

Absolute advantage is not the best guide for deciding who should do what. The best guide is comparative advantage. According to the **law of comparative advantage**, the worker with the lower opportunity cost of producing a particular output should specialize in that output. **Specialization**, then, occurs when individual workers focus on single tasks, enabling each one to become more efficient and productive. Note that for the definitions of both the law of comparative advantage and specialization, the term ***worker*** may be replaced by the terms ***firm, region,*** or ***country.***

What is *your* opportunity cost of washing each car? In the 45 minutes you take to wash a car, you could instead mow three-fourths of the lawn. So your opportunity cost of washing a car is mowing three-fourths of a lawn.

The Graphing Workshop

law of comparative advantage

The worker, firm, region, or country with the lowest opportunity cost of producing an output should specialize in that output

specialization

Occurs when individual workers focus on single tasks, enabling each one to be more efficient and productive

absolute advantage

To be able to make something using fewer resources than other producers require



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Study the two images and decide what the comparative advantages of the areas shown might be. (The locations in the images are New York City and Hawaii.)

Span the Globe

Child Labor

Though banned in the United States, recent figures from the International Labor Organization estimate that more than 250 million children under the age of 15 worldwide work to earn a living. Most of these children are working, not in factories, but on the family farm or on other farms. Many children work in conditions harmful to their health and physical development. Having to spend their time working also means that their educations are cut short. Developed countries have tried to prevent the use of child labor by banning products produced by child labor and by enforcing general trade sanctions against nations that allow it. However, a study by researchers at Dartmouth University indicates that, as a nation's international trade grows, its use of child labor declines. This was attributed to an increase in income due to the increase in international trade. Opponents of globalization, on the other hand, argue that an increase in international trade would bring about the use of more child labor to satisfy the increase in demand for the country's products.

THINK CRITICALLY

What do you think would be the most appropriate policy for combating child labor: emphasizing trade sanctions against countries that allow it or developing mutually beneficial trade ties with those same countries?

Source: "International Trade and Child Labor," *Popular Economics,* ©2004 BusinessWorld Publishing Corporation, July 26, 2004.

Investigate Your Local ECONOMY

In small groups, brainstorm a list of possible resources that provide your local economy with a comparative advantage. After five minutes of brainstorming, each group will present its results to the class.

In the hour David takes to wash a car, he could instead mow one-third of the lawn. So his opportunity cost of washing a car is mowing one-third of a lawn. Because your opportunity cost of washing a car is mowing three-fourths of a lawn and David's is mowing one-third of a lawn, he faces the lower opportunity cost of washing cars.

Again, the law of comparative advantage says that the person with the lower opportunity cost should specialize in producing that output. In this example, David should specialize in washing cars.

Because David has a lower opportunity cost for washing cars, you must have a lower opportunity cost for mowing lawns. So you should specialize in mowing lawns.

Gains from Specialization

If you each specialize, David will wash your family cars, and you will mow his lawn. David washes the four cars in four hours, saving himself an hour. You cut both lawns in two hours, saving yourself a half hour. Through specialization and exchange, each of you saves time. Even though you can complete each task in less time than David can, your comparative advantage is mowing lawns. Put another way, David, although not as good as you at either task, is not as bad at washing cars as he is at mowing lawns. He has a comparative advantage in washing cars. You each specialize based on comparative advantage, and you each save time.

Absolute advantage focuses on which of you uses the fewest resources, but comparative advantage focuses on what else those resources could have produced—that is, on the opportunity cost of those resources. The law of comparative advantage indicates who should do what.

Exchange

In this example, you and David specialize and exchange your output. No money is involved. In other words, you

two engage in **barter**, a system of exchange in which products are traded directly for other products. Barter works best in simple economies where there is little specialization and few types of goods to trade. For economies with greater specialization, ***money*** plays an important role in facilitating exchange.

Money—coins, bills, and checks—serves as a ***medium of exchange*** because it is the one thing that everyone is willing to accept in exchange for all goods and services.

Wider Application

Due to such factors as climate, an abundance of labor, workforce skills, natural resources, and capital stock, certain parts of the country and certain parts of the world have a comparative advantage in producing particular goods. From Apple software in California's Silicon Valley to oranges in Florida, from DVD players in Taiwan to bananas in Honduras—***resources are allocated most efficiently across the country and around the world when production and trade conform to the law of comparative advantage.***

✓CHECKPOINT

What is the law of comparative advantage?

Specialization

Because of specialization based on comparative advantage, most people consume little of what they produce and produce little of what they consume. People specialize in particular activities, such as plumbing or carpentry, and then exchange their products for money, which in turn is exchanged for goods and services.

Did you make anything you are wearing? Probably not. Think about the degree of specialization that went into your cotton shirt. Some farmer in a warm climate grew the cotton and sold it to someone who spun it into thread, who sold it to someone who wove it into fabric, who sold it to someone who sewed the shirt, who sold it to a wholesaler, who sold it to a retailer, who sold it to you. Many specialists produced your shirt.

NET Bookmark

To learn more about how barter works in the economy, see the web site of the International Reciprocal Trade Association (IRTA). IRTA's purpose is to "promote just and equitable standards of reciprocal trade and raise the value of reciprocal trade to businesses and communities worldwide by educating, self-regulating, and leading by example." Access this group's web site through thomsonedu.com/school/econxtra. After reading the material on the web site, write a paragraph answering the following questions: Do you think barter is an effective means of exchange in a market economy? Why or why not?

thomsonedu.com/school/econxtra

Division of Labor

Picture a visit to McDonald's: "Let's see, I'll have a Big Mac, an order of fries, and a chocolate shake." Less than a minute later, your order is ready. It would take you much longer to make a homemade version of this meal. Why is the McDonald's meal faster, cheaper, and—for some people—tastier than one you could make yourself? Why is fast food so fast?

McDonald's takes advantage of the gains resulting from the division of labor. The **division of labor** sorts the production process into separate tasks to be carried out by separate workers. Each worker specializes in a separate task. This division of labor allows the group to produce much more.

How is this increase in productivity possible? First, the manager can assign tasks according to individual preferences and abilities—that is, according to the law of comparative advantage. The worker with the nice smile and good personality can handle the customers up front. The muscle-bound worker with few social graces can do the heavy lifting in the back room.

Second, a worker who performs the same task again and again gets better at it: Experience is a good teacher. The worker filling orders at the drive-through,

barter
A system of exchange in which products are traded directly for other products

money
Anything that everyone is willing to accept in exchange for goods and services

division of labor
An action that sorts the production process into separate tasks to be carried out by separate workers

for example, learns how to deal with special problems that arise there. Third, because a worker stays with the same task, there is no time lost in moving from one task to another.

Finally, and perhaps most important, the division of labor allows for the introduction of more sophisticated production techniques—techniques that would not make sense on a smaller scale. For example, McDonald's large milkshake machine would be impractical in your home. The division of labor allows for the introduction of specialized machines, and these machines make each worker more productive.

To review, the division of labor takes advantage of individual preferences and natural abilities. It allows workers to develop more experience at a particular task. It reduces the time required to shift between different tasks. Finally, it permits the introduction of labor-saving machinery. The specialization that results with the division of labor does not occur among individuals only. It also occurs among firms, regions, and entire countries.

✓ CHECKPOINT

What are the gains from specialization and exchange?

Assessment 2.3

Key Concepts

1. Why does specialization require people to complete exchanges?
2. How does money help people complete exchanges?
3. How is a division of labor accomplished?
4. What advantages may be offered by a division of labor in addition to allowing workers to become more accomplished at the tasks they complete?

Graphing Exercise

Xtra! Study tools
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5. Joel and Jamal work together at a bakery. In one hour Joel can ice ten cakes or prepare five pies. In the same time Jamal can ice eight cakes or prepare only one pie. Draw bar graphs to represent production of iced cakes and prepared pies for each of the following situations. Explain how your graphs demonstrate the law of comparative advantage.

   Situation A—Joel spends one hour icing cakes and three hours preparing pies. Jamal does the same. **Situation B**—Joel spends four hours preparing pies, while Jamal spends four hours icing cakes.

Think Critically

6. **Research** Investigate the division of labor and specialization on a high-school sports team, such as basketball, football, or field hockey. Write a paragraph explaining the different positions, and how each one contributes to the team effort.

CONNECT TO HISTORY



Jamestown and the English Mercantile System

In 1612, John Rolfe began growing tobacco in Jamestown from seeds he obtained from the Spanish colonies. Rolfe acquired the seeds despite the Spaniards' threat of death to anyone selling tobacco seeds to a non-Spaniard. The local Indians may have aided Rolfe's acquisition of the seeds, as he was engaged to marry the chief's daughter, Pocahontas. By 1614, the first tobacco from Virginia was sold in London. Despite the disapproval of King James I, this "stinking weed" came into high demand in England and throughout Europe. With tobacco as a cash crop, the Virginia colony had the basis for its economic success in place.

With the success of tobacco, the demand for labor in the colony increased. Labor was first supplied by indentured servants, who sold their labor for passage to Virginia, food, clothing, and other necessities—but no wages. After filling the terms of the contract, usually three to seven years, the indentured servant would be given land, tools, and perhaps a small amount of money. A 20 percent death rate on the voyage over, and further exposure to hard work and disease, made it difficult to recruit indentured laborers. As time passed and the survival rate increased, more were willing to come. After indentured servants proved finally to be an unsatisfactory labor resource, slavery developed. Initially more expensive to purchase than indentured servants, slaves proved to be a cheaper form of labor, as their work was bought for life.

Although crops other than tobacco, such as wheat, could be grown in the South, the opportunity cost was high. By specializing in growing tobacco, a farmer could maximize his profits over what could be made from growing other crops. As planting tobacco became more profitable, laws had to be passed to require planters to devote some portion of their land to producing food. Tobacco was profitable on any size of farm. However, by specializing in tobacco, the soil was worn out every four to seven years. Consequently, maintenance of soil fertility favored large-scale producers. From this the plantation system developed, and with it the *specialization* of labor. With this success, Virginia's *comparative advantage* lay in growing tobacco.

Virginia tobacco farmers were part of the English mercantile system. The object of the system was to increase a nation's wealth, as defined by the amount of gold it possessed. Gold could be acquired by a nation possessing a territory that produced gold. It also could be acquired by developing a positive balance of trade that brought in gold payments. For England, tobacco was an ideal mercantilist product. It was easy to ship and could replace the imports of tobacco from Spain. England did not allow Virginia tobacco to be shipped or sold anywhere but back to England, where it became a large source of import duties growing the English treasury. By 1639, at least 750 tons of Virginia tobacco had been shipped to England. After a profit was taken, it could be re-exported to Europe. Adam Smith criticized the mercantilist system. England's enforcing it became a contributing factor to the American Revolution.

THINK CRITICALLY

The colonists in Jamestown were faced with the choice of producing food for consumption or producing tobacco for sale. Draw a *production possibilities frontier* for producing food on the horizontal axis and tobacco on the vertical axis. Label the points where the PPF intersects the axes, as well as several other points along the frontier. What would it mean for the colonists to move upward and to the left along the PPF? Under what circumstances would the PPF shift outward?

2 Chapter Assessment

Summary

2.1 Economic Questions and Economic Systems

a All economic systems must answer three basic questions: (1) What goods will be produced? (2) How will these goods be produced? (3) For whom will these goods be produced?

b In a pure market economy, all resources are privately owned and controlled. Competition forces businesses to serve the interest of consumers as these businesses try to earn a profit. Property rights must be protected for a market economy to work. Business owners would not bother trying to produce if any profit earned was taken from them.

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c Pure market economies have some problems. These include the difficulty in enforcing property rights, the possibility that people who produce little of value will fall into poverty, the possibility of businesses monopolizing markets, and a lack of public goods. Another problem is that externalities will impose costs or confer benefits on people not directly involved in a market transaction.

d In a pure command economy, all resources are publicly owned and controlled. Government planners answer the three basic economic questions according to their own priorities or those of government leaders. Problems associated with these economies include a low priority given to consumer preferences, little consumer freedom of choice, and inefficient use of resources.

e The problems of pure market and pure command economies have caused some nations to reorient their economies. Many command economies have increased the role of markets while some market economies have increased the role of their governments. Nations moving from command economies to market economies have *transitional economies.*

f Some nations have *traditional economies* in which resources are allocated according to traditions that are passed from one generation to the next.

2.2 Production Possibilities Frontier

a Economists construct graphs called *production possibility frontiers* (PPFs) to demonstrate different combinations of two products that can be produced from a fixed amount of resources. Simplifying assumptions include focusing on a specific time period, such as a year, and holding technology and resources fixed during that period.

b The PPF for two products bows out from the corner of their graph because the trade-off in production between the two goods is not one-for-one. The *law of increasing opportunity* cost states that each additional unit of one good produced requires successively larger sacrifices of the other good. This happens because resources are not perfectly adaptable to the production of both goods.

c Any point inside a PPF indicates inefficient production because more goods could be produced from the available resources. Any point outside a PPF indicates a level of production that cannot be achieved without additional resources. A PPF will shift outward if more or better resources become available, or technology improves.

2.3 Comparative Advantage

a According to the law of comparative advantage, people should specialize in the type of production where their opportunity cost is the lowest.

b Specialization allows workers to become more efficient through practice. When people specialize, they must exchange what they produce for other goods they desire. These exchanges are easier when carried out through the use of money.

c Many steps must be completed to produce most goods. When individual workers special-

ize in specific steps in this process, there is a division of labor. A division of labor results in greater efficiency because workers become more skilled in their tasks, lose no time switching between tasks, and are able to use more sophisticated production techniques.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The set of mechanisms and institutions that resolve the what, how, and for whom questions for an economy

_____ **2.** Organizing the production of goods into separate tasks to be carried out by separate workers

_____ **3.** Ability to make something using fewer resources than other producers require

_____ **4.** Anything that everyone is willing to accept in exchange for goods and services

_____ **5.** The worker, firm, region, or country with the lowest opportunity cost of producing a particular output should specialize in that output

_____ **6.** Producing the maximum possible output from available resources

_____ **7.** An economic system with no government so that firms account for all production

_____ **8.** Shows the possible combinations of two types of goods that can be produced when available resources are employed efficiently

_____ **9.** An economic system combining aspects of central planning and competitive markets

_____**10.** An expansion of the economy's ability to produce

a. absolute advantage
b. barter
c. division of labor
d. economic growth
e. economic system
f. efficiency
g. law of comparative advantage
h. law of increasing opportunity cost
i. market economy
j. mixed economy
k. money
l. production possibilities frontier (PPF)
m. pure command economy
n. pure market economy
o. specialization
p. traditional economy
q. transitional economy

Review Economic Concepts

11. True or False According to the *law of comparative advantage,* only people with an absolute advantage can benefit from specialization.

12. _?_ is a system of exchange in which products are traded directly for other products.

13. Which of the following is the best example of a *division of labor?*

a. Todd lives in a cabin in the woods where he does most things for himself.

b. Julia works as a doctor, while her husband Ted is an automobile mechanic.

c. Benito washes dishes after lunch, while his wife dries and puts them away.

d. Brenda reads the front page of the newspaper while her husband studies the comics.

14. True or False The *law of comparative advantage* applies not only to individuals, but also to firms, regions of countries, and entire nations.

15. True or False All economic systems must decide what goods will be produced from the resources they have.

16. The economic question _?_ often is referred to as the *distribution question.*

17. Points _?_ the PPF represent unattainable combinations given the resources and technology available.

18. Which of the following is *not* a simplifying assumption made when a *production possibilities frontier* (PPF) is created?
    a. Only two goods are considered.
    b. The prices of the goods produced do not change.
    c. Production is limited to a fixed period of time.
    d. There is a set amount of resources available in the economy.

19. Movement along the PPF indicates that the _?_ of more capital goods is fewer consumer goods.

20. According to the *law of increasing opportunity cost,* each additional increment of one good requires the sacrifice of
    a. successively larger increments of the other good.
    b. equal increments of the other good.
    c. successively smaller increments of the other good.
    d. the level of productive efficiency.

21. **True or False** In a *pure market economy,* resources are publicly owned and controlled.

22. Adam Smith argued that although each individual pursues his or her self-interest in a market economy, the "invisible hand" of _?_ promotes the general welfare.

23. **True or False** One problem with *command economies* is too much focus on consumer needs and wants.

24. **True or False** In *command economies,* government enterprises often are more concerned with meeting the production goals set by the public officials than they are about the environment.

25. _?_ is a process that involves converting government-owned enterprises into private enterprises.

26. An economic system in which the means and methods of production are passed from one generation to the next is a definition of a
    a. pure market economy.
    b. pure command economy.
    c. transitional economy.
    d. traditional economy.

Apply Economic Concepts

27. **Create a Division of Labor** Make a list of five friends who you know well. Assume that the six of you have decided to open a small restaurant. Assign each of your friends, and yourself, to one of the following job descriptions in the way that you believe would result in the most efficient operation of your restaurant. Briefly explain the reasons for each of your assignments. How does this demonstrate the advantages of specialization and a division of labor?
    a. Greet customers and take them to their tables
    b. Take customer orders and bring food to their tables
    c. Be the chief cook in the kitchen
    d. Clear tables and wash dishes
    e. Keep the books, accept payments, order supplies, and pay the bills
    f. Be the chief cook's assistant

28. **Apply Production Possibilities** Imagine an economy that uses two resources, labor and capital, to produce two goods, wheat and cloth. Capital is relatively more useful in producing cloth, and labor is relatively more useful in producing wheat. If the supply of capital falls by 10 percent and the supply of labor increases by 10 percent, how will the PPF for wheat and cloth change?

29. **Apply Shifts of Production Possibilities** Determine whether each of the following would cause the economy's PPF to shift inward, outward, or not at all.
    a. Increase in average vacation length
    b. Increase in immigration
    c. Decrease in the average retirement age
    d. Migration of workers to other countries

30. **Measure the Benefit of Specialization** Both Marcy and Gloria work eight-hour days at a public library. Last Monday, Marcy spent

six hours reshelving 300 books. Then she catalogued 50 books during the remaining two hours of her shift. Gloria used her first six hours cataloging 60 books, and then she reshelved 200 books in the two hours before she went home.

Copy and complete the following table to show Marcy and Gloria's production last Monday. Create another table that demonstrates how they could increase their total production through specialization. How much more could they produce if they each specialized in the type of production that involves their lowest possible opportunity cost?

Marcy and Gloria's Production Last Monday

Marcy's Production			Gloria's Production		
Time used	# books catalogued	# books shelved	Time used	# books catalogued	# books shelved
2 hours			2 hours		
6 hours			6 hours		
Total books catalogued:					
Total books shelved:					

Marcy and Gloria's Possible Production with Specialization

Marcy's Production		Gloria's Production	
Time used hours	# books catalogued or shelved	Time Used hours	# books catalogued or shelved
hours		hours	
Total books catalogued:			
Total books shelved:			
Additional books catalogued:			
Additional books shelved:			

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31. Access **EconNews Online** at thomsonedu.com/school/econxtra. Read the article entitled "Trade Wars in the U.S." According to the article, what percent of the population believes that foreign trade is bad for the U.S. economy? What, according to the article, is the basis for this belief? Do you agree or disagree? Justify your answer with facts from the article.

3 U.S. Private and Public Sectors

3.1 The U.S. Private Sector

3.2 Regulating the Private Sector

3.3 Public Goods and Externalities

3.4 Providing a Safety Net



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CONSIDER

Why did households go from self-sufficiency to relying on markets?

How did firms evolve to take advantage of large-scale production?

Why do countries trade?

If the "invisible hand" of competitive markets works so well, why do governments get into the act?

Why are some people poor even in the world's most productive economy?

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3.1 The U.S. Private Sector

Objectives

- Describe the evolution of households.
- Explain the evolution of the firm with respect to the changes in production processes.
- Demonstrate your understanding of why international trade occurs.

Overview

The private sector includes three groups of economic decision makers: households, firms, and the rest of the world. To develop a better feel for how the economy works, you must become more acquainted with these key players. You already know more about them than you may realize. You grew up as a member of a household. You have interacted with firms all your life, from Wal-Mart to Subway. You have a growing awareness of the rest of the world, from imported cars to international web sites.

Key Terms

household

utility

firm

Industrial Revolution

In the News

Spending Is More Equal Than Income

According to a recent Consumer Expenditure Survey by the U.S. Department of Labor, average annual household spending was $43,395. The largest expenditure, housing, was $13,918. The second biggest household expense, $7,801, was for transportation, with $3,397 of that going to vehicle purchases. Food accounted for $5,781 of average household spending. Forty percent of the spending in the nation was done by the top fifth of the households. Averaging $125,000 in after-tax income, this top 20 percent earns more than double the national average of $52,000. At the bottom are those households that average only $9,220 after taxes. The bottom fifth's share of spending dropped from 9.6 percent in 1984 to 8.4 percent most recently. This is reflected in the growing gap between what is spent by the rich and by the poor. In 1984 the top 20 percent spent 3.8 times as much as the bottom fifth households. This difference rose to 4.1 in 2001 and reached 4.7 most recently. Notice, however, that although after-tax income of the top fifth averages 13.5 times more than bottom fifth, the share of spending by the top fifth is only 4.7 times that of the bottom fifth. So while spending is clearly unequal across income groups, it is much more equal than after-tax income.

THINK ABOUT IT

With regard to education spending, the bottom one-fifth of American households accounts for 14.2 percent, the second one-fifth accounts for 6.9 percent, the third one-fifth accounts for 8.8 percent, the next one-fifth accounts for 17.9 percent. The top one-fifth accounts for 52.2 percent of all education spending. What do these figures say about the educational goals households may have based on income?

Sources: Bradley Johnson, "It's Official: the Rich Buy More," *Television Week,* February 6, 2006; "The Consumer," *Advertising Age,* January 23, 2006; Mark Dolliver, "Keeping Track of How Households Divvy Up Their Yearly Expenditures," *Adweek,* December 12, 2005.

Households

household
The most important economic decision maker, consisting of all those who live under one roof

Households play the starring role in a market economy. All those who live under one roof are considered part of the same **household**. Households' demand for goods and services determines what gets produced. The human resources, natural resources, and capital goods they sell help to produce that output. As buyers of goods and services and sellers of resources, households make all kinds of economic choices. These choices include what to buy, how much to save, where to live, and where to work.

Evolution of the Household

In 1850 about two-thirds of America's labor force worked on farms. The economy was primarily agricultural, and each farm household was largely self-sufficient. Individual family members specialized in specific farm tasks—preparing meals, sewing clothes, tending livestock, growing crops, and so on. These households produced most of what they consumed and consumed most of what they produced.

With the introduction of labor-saving machinery, disease-resistant seeds, and better fertilizers, farm productivity increased sharply. Because each farmer produced much more, fewer farmers were needed to grow enough food to feed the nation. At the same time, the growth of urban factories increased the demand for factory labor. As a result, many workers and their families moved from farms to cities, where they became less self-sufficient. Now, only about 2 percent of the U.S. labor force works on farms.

Investigate Your Local ECONOMY

Research to find how many households there are in your community. How many of those are two-earner families? How many are headed by a single parent? What is the average annual income of households in the community? What conclusions can you draw from your research?



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Although the makeup of households differs, each one makes a variety of economic choices. What types of choices must all households make?

U.S. households have evolved in other important ways. For example, in 1950 only about 15 percent of married women with children under 18 years old were in the labor force. Since then, higher education levels among married women and a growing need for workers increased women's earnings, raising their opportunity cost of staying home. Today, more than half of married women with young children are in the labor force.

The rise of two-earner households has affected the family as an economic unit. Less production occurs in the home. More goods and services are purchased in markets. Reduced household production has led to increased availability of child-care services and greater varieties of restaurants to meet these needs. The rise of two-earner families has reduced the importance of specialization within the household.

Households Maximize Utility

There are more than 115 million U.S. households. Economists consider each household as acting like a single decision maker. Households, like other economic decision makers, are assumed to pursue their rational self-interest. This means they try to act in their best interests by selecting products and services that are intended to make them better off.

But what exactly do households attempt to accomplish in making decisions? Economists assume that households attempt to maximize their **utility**—their level of satisfaction or sense of well-being. Utility maximization depends on each household's personal goals, not on some objective standard. For example, some households maintain neat homes with well-groomed lawns. Other households pay little attention to their homes and yards.

✓ CHECKPOINT

In what ways has the household evolved over time?

Firms

Household members once built their own homes, made their own clothes and furniture, grew their own food, and entertained themselves. Over time, however, the efficiency arising from comparative advantage resulted in a greater specialization among resource providers. Resource providers often organize as firms. A **firm** is an economic unit formed by a profit-seeking entrepreneur who combines resources to produce goods and services and accepts the risk of profit and loss. What led to the development of the firm as we know it today?

firm
A business unit or enterprise formed by a profit-seeking entrepreneur who combines resources to produce goods and services

Evolution of the Firm

Specialization and comparative advantage help explain why households are no longer self-sufficient. But why is a firm the natural outgrowth? For example, rather than make a woolen sweater from scratch, couldn't a consumer take advantage of specialization by hiring someone to produce the wool, another person to spin the wool into yarn, and a third to knit the yarn into a sweater? Why is a firm even necessary?

Here's the problem with that model: If the consumer had to visit and make agreements with each of these specialists, the resulting *transaction costs*—the cost of time and information required for exchange—could easily cancel out the efficiency gained from specialization. Instead of visiting and dealing with each specialist, the consumer can pay someone else to do this. The consumer can pay an entrepreneur to purchase all the resources necessary to make the sweater. *An entrepreneur, by hiring specialists to make many sweaters rather than just one, is able to reduce the transaction costs per sweater.*

utility
The level of satisfaction from consumption or sense of well-being

During the seventeenth and eighteenth centuries, entrepreneurs provided raw material, such as wool and cotton, to rural households. The entrepreneur hired households to turn this raw material into finished products, such as woolen goods made from yarn. The system developed in the British Isles, where workers' rural

Industrial Revolution
Development of large-scale production during the eighteenth century

cottages served as tiny factories. Production usually occurred during the months when farming tasks were few—when the opportunity cost for farm workers was lower.

This approach, which came to be known as the *cottage industry system,* still exists in some parts of the world. You can view this system as the bridge between the self-sufficient farm household and the modern firm.

The Industrial Revolution

As the economy expanded in the eighteenth century, entrepreneurs began organizing the stages of production under one roof. Technological developments, such as water power and later steam power, increased the productivity of each worker and contributed to the shift of employment from rural farm to urban factory.

Work, therefore, became organized in large, centrally powered factories that:

1. promoted more efficient division of labor
2. allowed for the direct supervision of production
3. reduced transportation costs
4. facilitated the use of specialized machines far larger than anything that had been used in the home

The development of large-scale factory production, known as the **Industrial Revolution**, began in Great Britain around 1750. The Industrial Revolution then spread to the rest of Europe, North America, and Australia. Production evolved from self-sufficient rural households to the cottage industry system, where specialized production occurred in the household, to the Industrial Revolution of handling most production under one roof. Figure 3.1 shows this evolution.

Today, entrepreneurs combine resources in firms such as factories, mills, offices, stores, and restaurants. The entrepreneurs accept the risk of profit and loss from the enterprise. Just as households attempt to maximize utility, firms attempt to maximize profit. Profit is the entrepreneur's reward for accepting the risks involved. Profit equals revenue—the money made from the sales of the firm's goods and services—minus the cost of production.

Profit = Revenue − Cost of Production

There are more than 27 million profit seeking firms in the United States. Two-

Evolution of Production **Figure 3.1**

The production process evolved from self-sufficient rural households to the cottage industry system, where specialized production occurred in the household. From there, the Industrial Revolution saw the organization of the various stages of production under one roof with the development of large-scale factory production.


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thirds of these are small retail businesses, small service operations, part-time home-based businesses, and small farms. Each year more than a million new businesses start up and nearly as many go out of business. Despite the challenges, the lure of profit provides entrepreneurs with the incentive to keep trying.

✓CHECKPOINT

How have production processes changed over time?

The Rest of the World

So far the focus has been on private-sector institutions within the United States—that is, U.S. households and firms. This initial focus has been appropriate because the primary objective is to understand the workings of the U.S. economy, by far the largest in the world.

The rest of the world affects what U.S. households consume and what U.S. firms produce. For example, firms in Japan and South Korea supply U.S. markets with autos, electronic equipment, and other goods, thereby affecting U.S. prices, employment, wages, and profit. Political unrest in the Persian Gulf can drive up the price of oil, increasing U.S. production costs.

Foreign decision makers have a significant effect on the U.S. economy—on what Americans consume and on what they produce. The *rest of the world* consists of the households, firms, and governments in the more than 200 sovereign nations throughout the world.

International Trade

The gains from comparative advantage and specialization explain why households stopped trying to do everything for themselves and began to sell their resources to specialized firms. International trade arises for the same reasons. *Gains from international trade occur because the opportunity cost of producing specific goods differs across countries.*

Trade allows the countries involved to specialize and thereby increase production. Americans buy raw materials such as crude oil, diamonds, and coffee beans and finished goods such as cameras, DVD players, and automobiles from other countries. U.S. producers sell to other countries sophisticated products such as computer hardware and software, aircraft, movies, and agricultural products.

International trade between the United States and the rest of the world

Span the Globe

China's March to a Free Economy

China joined the World Trade Organization (WTO), the rules-making body of modern global commerce, in 2001. In mid-April of 2006 the WTO launched its first review of Chinese economic policies since China joined the organization. To ensure continued membership in the WTO, China must implement policies that encourage international trade. China also must show evidence of moving from a command economy to a more market-driven system. China generally has made great strides towards a free economy and meeting the WTO requirements. The country has received some criticism from the United States and the European Union over trade subsidies and violations of intellectual property rights. (More than 90 percent of computers in the country operate with pirated software.) However, the Chinese have lowered tariff levels of industrial goods and farm products. China also has begun to open up the banking, insurance, distribution, telecommunications, and more than 90 other subsectors of its economy to the required levels.

THINK CRITICALLY

Should China be allowed to remain a member of the WTO? Why or why not?

Sources: "WTO Expected to Praise Trade Policies," Financial Times Information Limited, Asia Intelligence Wire, Business Daily Update for April 24, 2006; "U.S. Concerned China Has Not Lived Up to Its WTO Commitments," States News Service, April 19, 2006.

NET Bookmark

What goods and services does the United States trade? With whom? Who are our largest trading partners? Answers to these and many other trade-related questions can be found at the U.S. Census Bureau's Trade Data web site. Access this site through

thomsonedu.com/school/econxtra

has increased in recent decades. In 1970, only about 6 percent of U.S. production was sold to other countries. That figure has nearly doubled to 11 percent.

Trade in Raw Materials

To give you some idea of how international trade works, consider the trade in raw materials. Figure 3.2 shows U.S. production as a percentage of U.S. consumption for 14 key commodities. If production exceeds consumption, the United States sells the difference to other countries. If production falls short of consumption, the United States purchases the difference from other countries. For example, because the United States grows little coffee, nearly all coffee is purchased from other countries. U.S. production of coffee is only 1 percent of U.S. consumption.

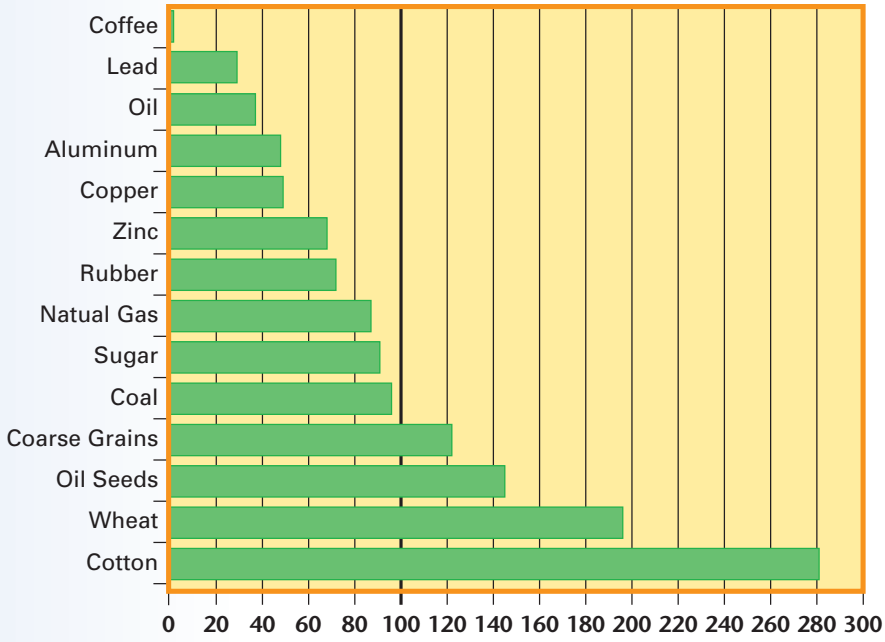
The figure also shows that U.S. production falls short of consumption for oil and for metals such as lead, zinc, copper, and aluminum. At the other extreme, U.S.-grown wheat is nearly double U.S. wheat consumption. Nearly half of the U.S. wheat crop is exported. And U.S.-grown cotton production is nearly three times U.S. cotton consumption. Thus, U.S. cotton exports are nearly double the domestic consumption of cotton. When it comes to raw materials, the United States is a net importer of energy and metals and a net exporter of crops.

✓ CHECKPOINT

Why does international trade occur?

U.S. Production as a Percentage of U.S. Consumption — **Figure 3.2**

If production exceeds consumption, the United States sells the difference to other countries. If production falls short of consumption, the United States buys the difference from other countries. For example, because the United States produces only 1 percent of its coffee consumption, 99 percent is purchased from other countries. Because U.S.-grown cotton amounts to 281 percent of U.S. cotton consumption, the 181 percent in excess of 100 percent is exported to other countries.



Source: Based on annual figures from *The Economist World in Figures: 2006 Edition* (London: Profile Books, 2006).

Assessment 3.1

Key Concepts

1. Describe three tasks that would probably have been done within most households 100 years ago that your family now pays others to do.
2. Identify a product that you often buy and use. Describe the steps that are taken to produce this good. Explain why you do not produce this product for yourself.
3. What are several advantages that a large automobile repair shop would have over a small one?
4. In what ways is working at home on a computer today similar to, and different from, the cottage industry system that existed in the seventeenth century?
5. Think of a recent event that took place in a different part of the world that had an impact on the U.S. economy. Explain how the event affected the U.S. economy.

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Graphing Exercise

6. Draw a bar graph that demonstrates the declining size of the average U.S. household, based on the data in the table to the right. Explain why smaller households might encourage people to purchase more of the goods and services they use.

Year	Average Size of U. S. Household
1950	3.38 members
1960	3.29
1970	3.11
1980	2.75
1990	2.63
2000	2.59

Source: *Statistical Abstract of the United States 2003,* p. 19, Table No. HS-12.

Think Critically

7. **Research** Choose a foreign country that one of your ancestors came from or a country that interests you. Investigate this nation's economy and identify products it trades. Explain how this nation benefits from trade by using its comparative advantage.
8. **History** In 1825, Robert Owen bought a community called New Harmony in Indiana. He told people who lived in New Harmony to contribute whatever they produced to a community storehouse. They could also take whatever they needed from this storehouse for free. Look up New Harmony and find out how Owen's experiment worked out. Why weren't residents of New Harmony able to benefit from their comparative advantages?

3.2 Regulating the Private Sector

Objectives

- Explain how government can improve operation of the private sector.
- Distinguish between regulations that promote competition and those that control natural monopolies.
- Describe how fiscal policy and monetary policy try to control the business cycle.

Overview

The private sector would not run smoothly on its own in a pure market economy. With no government, there would be no laws to protect your life and property. People could rob your earnings and possessions and steal your inventions and ideas. Business contracts would have no binding force without laws and the authority to enforce those laws. Some firms could drive competitors out of the market. Firms also could sell unsafe or defective products or otherwise cheat consumers. These actions could bring about reduced economic activity and result in high unemployment. Government tries to address these market shortcomings.

Key Terms

private property rights

antitrust laws

natural monopoly

fiscal policy

monetary policy

In the News

How Private Is Your Property?

The Fifth Amendment of the U.S. Constitution states ". . .nor shall private property be taken for public use, without just compensation." The legal term *eminent domain* refers to the power of the government to take private property for public use in exchange for a fair market price. However, in *Kelo v. City of New London* the U.S. Supreme Court ruled that the government could seize private property through eminent domain if its purpose was to promote economic development. This case broadened the definition of "public use" to include transfers of property for private development that would create jobs and increase the tax base. While the homeowners were compensated for their loss, they argued that the term "public use" referred to things such as a road or public facilities. They believe that a broad interpretation would allow the government to take virtually any private property and transfer it to another private owner as long as it was to be upgraded. Justice O'Connor wrote, "The specter of condemnation hangs over all property. Nothing is to prevent the state from replacing any Motel 6 with a Ritz-Carlton, any home with a shopping mall, or any farm with a factory."

THINK ABOUT IT

Justice Stevens, in writing for the majority in the *Kelo* case, said that states can place restrictions on the use of eminent domain. Does this make the "rules" for a market economy clearer? Do you think this Supreme Court ruling helps or hurts the economy?

Sources: Linda Greenhouse, "Justices Uphold Taking Property for Development," *New York Times,* June 24, 2005; Dave Scharfenberg, "Yes, Towns Can Seize Land, but Aren't There Limits?" *New York Times,* February 5, 2006.

Rules for a Market Economy

The effects of government regulations are all around you. Government-required labels that provide washing instructions are stitched into the clothes you wear. The condition of the vehicle you drive to school is regulated by the government. The government also regulates how fast you can drive and prohibits you from driving under the influence of alcohol. Government has a pervasive influence on many aspects of your life as well as on the economy.

Establishing Property Rights

In a market system, specific individuals usually own the rights to resources. **Private property rights** guarantee individuals the right to use their resources as they choose or to charge others for the use. Owners therefore have a strong incentive to get the most value from their resources. This ensures that resources will find their most productive use.

However, if people could not safeguard their property, they would have less incentive to work, to save, to invest, to buy things, or to pursue other market activity. Markets could break down. For example, less investment would occur if potential investors believed their capital goods might be stolen by thieves, damaged by civil unrest, destroyed by war, or blown up by terrorists. You would have less incentive to work if your employer refused to pay you or if you were repeatedly robbed of your earnings.

Governments play a role in safeguarding private property by establishing legal rights of ownership. They then enforce these rights through national defense, police protection, legal contracts, and the judicial system.

private property rights
Legal claim that guarantees an owner the right to use a resource or to charge others for its use

e-conomics

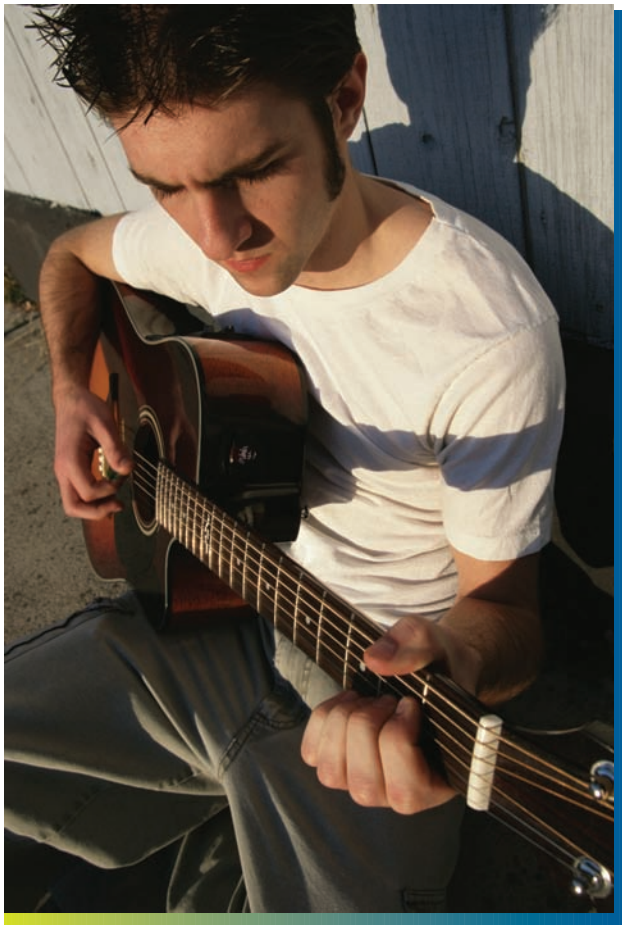
ELECTRONIC HEALTH CARE RECORDS: SAFETY VERSUS PRIVACY

As the health care system moves to electronic access and transfer of records, demands are being made on Congress to ensure the privacy of the individual patients those records represent. The new electronic transfer system is touted to be far more reliable in preventing conflicting prescriptions, duplication of testing, and allergic reactions. The new system also will assist greatly in health monitoring and offer a cost savings estimated at more than $80 billion according to the U.S. Department of Health and Human Services. However, groups such as the Family Research Council and the American Civil Liberties Union point out that health records are the most sensitive documents kept on Americans. They note the lack of individual patients' rights to protect themselves from the distribution of adverse information and potential identity theft. They also warn about the patients' inability to restrict to whom the information can be transferred or what information is accessible through the system.

THINK CRITICALLY

Do you think the overall benefits of the system are worth the potential costs to an individual's privacy? Why or why not?

Sources: "Rep. Kennedy Urges Congress to Push for Privacy in Health Care IT," US Fed News, April 12, 2006; "Privacy Advocates Fight Proposed Medical-records Network," Scripps Howard News Service, November 7, 2005.



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What type of intellectual property right protects the compositions of this young musician?

Intellectual Property Rights

Laws also grant property rights to the creators of new ideas and new inventions. Inventors reap the rewards of their creations so they have more incentives to create.

Patent laws encourage inventors to invest the time and money required to discover and develop new products and processes. If others could simply copy successful products, inventors would be less willing to incur the up-front costs of invention. Patents also provide the stimulus to turn inventions into marketable products, a process called *innovation.*

Thus, the patent system establishes property rights to inventions and other technical advances. Likewise, a *copyright* assigns property rights to original expressions of an author, artist, composer, or computer programmer. A *trademark* establishes property rights to unique commercial marks and symbols, such as McDonald's golden arches and Nike's swoosh.

Measurement and Safety

Much market exchange involves products sold by weight, such as a pound of hamburger, or by volume, such as a gallon of gasoline. To ensure buyers don't get cheated, governments test and certify the accuracy of various measuring devices. For example, the U.S. Bureau of Weights and Measures is responsible for the annual inspection and testing of all commercial devices used to buy, sell, and ship products.

Consumers also want to be confident that the products they buy are safe. The U.S. Food and Drug Administration (FDA) regulates the safety of foods, prescription and over-the-counter drugs, and medical devices. The U.S. Department of Agriculture helps the FDA by inspecting and grading meat and poultry for freshness and quality. The Consumer Product Safety Commission, a federal agency, monitors the safety of all consumer products, from baby cribs to dishwashers.

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To learn more about patents, go to the U.S. Patent and Trademark Office's web page on General Information Concerning Patents. Access this web site through thomsonedu.com/school/econxtra In your own words, describe who may apply for a patent.

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✓ CHECKPOINT

How can laws and regulations improve the operation of the private sector?

Market Competition and Natural Monopolies

It's been said that businesspeople praise competition, but they love monopoly. Their praise of competition echoes Adam Smith's argument that the invisible hand of market competition harnesses self-interest to promote the general good. However, competition imposes a discipline that most businesses would rather avoid. A business owner would prefer to be a monopolist—that is, to be the only seller of a product. As an only seller, a monopolist can usually charge a higher price and earn a greater profit than would be possible with greater competitive pressure.

Promoting Market Competition

Although competition typically ensures the most efficient use of resources, an individual firm would prefer the higher price and higher profit of monopoly. Here's the problem. When a few firms account for most of the sales in a market, such as the market for steel, those firms may join together to fix a price that is higher than one that would result from greater market competition. These firms try to act like a monopolist to boost the price and profits. An individual firm also may try to become a monopolist by driving competitors out of business or by merging with competitors.

Thus, a monopoly or a group of firms acting like a monopoly tries to charge a higher price than would result through competition. This higher price hurts consumers more than it benefits producers, making society worse off. Monopoly may harm social welfare in other ways as well. If a monopoly is insulated from market competition, it may be less innovative than aggressive competitors would be. Worse still, monopolies may try to influence the political system to protect and enhance their monopoly power.

Antitrust laws attempt to promote competition and reduce anticompetitive behavior. These laws prohibit efforts to create a monopoly in a market in which competition is desirable. Antitrust laws are enforced in the courts by government attorneys. They also are enforced by individual firms bringing lawsuits against other firms for violating these laws.

Regulating Natural Monopolies

Competition usually forces the product price lower than it would be if the product were sold by a monopoly. In rare instances, however, a monopoly can produce and sell the product for less than could several competing firms. For example, electricity is delivered more efficiently by a single firm that wires the community than by competing firms each stringing their own sets of wires. A city's subway service is delivered more efficiently by a single firm digging one tunnel system than by competing firms each digging their own. The cost per customer of delivering electricity or subway service is lower if each of these markets is served by a single firm.

When it is cheaper for one firm to serve the market than for two or more firms to do so, that firm is called a **natural monopoly**. But a natural monopoly, if unregulated by government, maximizes profit by charging a higher price than is optimal from society's point of view.

Government can increase social welfare by forcing the monopolist to lower its price. To do this, the government can either operate the monopoly itself, as it does with most urban transit systems, or regulate a privately owned monopoly, as it does with local phone services and electricity transmission. Government-owned and government-regulated monopolies are called *public utilities*.

✓ CHECKPOINT

Why does government promote competition in some markets and control natural monopolies in others?

natural monopoly
One firm that can serve the entire market at a lower per-unit cost than two or more firms can

antitrust laws
Laws that prohibit anticompetitive behavior and promote competition in markets where competition is desirable

Growth and Stability of the U.S. Economy

monetary policy
The central bank's attempts to control the money supply to influence the national economy

fiscal policy
The federal government's use of taxing and public spending to influence the national economy

The U.S. economy and other market economies experience alternating periods of growth and decline in their level of economic activity, especially employment and production. *Business cycles* reflect the rise and fall of economic activity relative to the long-term growth trend of the economy. Governments try to reduce these fluctuations, making the bad times not so bad and the good times not quite so good. Pursuing these objectives through taxing and spending is called *fiscal policy*. Pursuing them by regulating the money supply is called *monetary policy*.

Fiscal Policy

Fiscal policy uses taxing and public spending to influence national economic variables such as how much is produced, how many people have jobs, and how fast the economy grows. The idea behind fiscal policy is that when economic activity in the private sector slows down, the government should offset this by cutting taxes to stimulate consumption and investment. The government also may increase its own spending to offset a weak private sector.

If, on the other hand, the economy is growing so fast as to cause higher *inflation,* which is an increase in the economy's average price level, the government should increase taxes and reduce its own spending to cool down the economy. This will keep inflation from getting too high.

When economists study fiscal policy, they usually focus on the federal government, although governments at all levels affect the economy. The federal, state, and local governments in the United States spend about $4.0 trillion per year, making the public sector a significant part of the country's $13 trillion economy.

Monetary Policy

Just as oil makes the gears in a car move more smoothly, money reduces the friction—the transaction costs—of market exchange. Too little money can leave parts creaking. Too much money can gum up the works.

Monetary policy tries to supply the appropriate amount of money to help stabilize the business cycle and promote healthy economic growth. In the United States, monetary policy is the responsibility of the Board of Governors of the Federal Reserve System, the U.S. central bank established by Congress in 1913. The Federal Reserve System, or Fed, used monetary policy in 2005 and 2006 to try to slow down the nation's surging economy. By slowing the growth of the money supply, the Fed increased a key interest rate in the economy. This action was intended to discourage borrowing and spending and thereby prevent higher inflation.

Too much money in circulation results in higher inflation. For example, in 1994 huge increases in Brazil's money supply resulted in wild inflation. Prices in Brazil were on average about 3.6 million times higher in 1994 than in 1988.

At the other extreme, too little money in an economy can make market exchange more difficult. For example, people tried to cope with a severe money shortage in the early American colonies by maintaining very careful records, showing who owed what to whom. However, the transaction costs of all this record keeping used up scarce resources and reduced output in the economy.

✓ CHECKPOINT

How do fiscal policy and monetary policy reduce the ups and downs of the business cycle?

Assessment 3.2

Key Concepts

1. Describe one way your life might be different if the government did not protect individual property rights.
2. Study the contents label of a cereal box. Explain how the government attempts to protect consumers when it requires manufacturers to place these labels on food products.
3. In 2001 the government passed laws that reduced many federal taxes. Explain why this could be seen as an example of *fiscal policy* that was intended to cause the economy to produce more goods and services.
4. During the economic expansion of the late 1990s, the Federal Reserve System took steps to reduce the rate of growth of money in the U.S. economy. Was this an example of monetary policy that was intended to slow the growth of production? Why or why not?

Graphing Exercise

5. Draw a double line graph of changes in the money supply and interest rates charged to large businesses in the U.S. economy, based on the data in the table at the top right. Describe how these two sets of data appear to be related to each other.

Think Critically

6. **Math** Calculate the amount of the federal government's surplus or deficit in different years, using data in the table at the right. Are you concerned about the government spending more than it receives in taxes? Explain your point of view.

Changes in the Money Supply and Interest Rates, 1997–2005

Year	% change in money [M1]	% interest charged to businesses [prime]
1997	– 0.6%	8.4%
1998	2.3	8.4
1999	2.5	8.0
2000	– 3.2	9.2
2001	8.7	6.9
2002	3.1	4.7
2003	7.0	4.1
2004	5.2	4.3
2005	– 0.2	6.2

Source: *Economic Indicators,* March 2006, pp. 26 & 30.

Federal Spending and Tax Revenue, 1999–2005
Amounts in billions of dollars

Year	Spending	Tax Revenue	Difference
1999	1,702	1,828	_____
2000	1,789	2,025	_____
2001	1,863	1,991	_____
2002	2,012	1,853	_____
2003	2,160	1,783	_____
2004	2,293	1,880	_____
2005	2,472	2,154	_____

Source: *Economic Indicators,* March, 2006, p. 32.

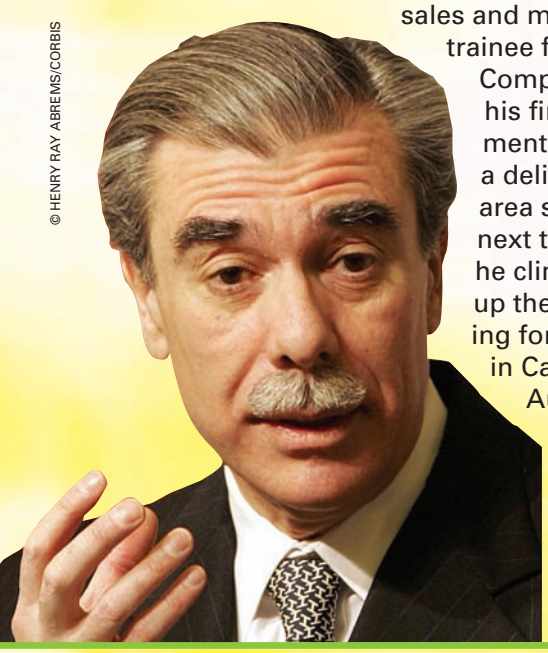
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movers & shakers

Carlos Gutierrez *U.S. Secretary of Commerce*

Carlos Gutierrez and his family came to the United States from Cuba when Carlos was six years old. Communists had confiscated their pineapple farm, and they came to the United States for a new start. "My father was devastated, but it brought out the essence of his work ethic, something that affected the entire family. We pulled together in Miami and embraced the great opportunities this country offered us to start over."

Eventually the family left Miami for Mexico where Carlos attended college and got a job as a sales and marketing trainee for the Kellogg Company. One of his first assignments was driving a delivery truck to area stores. For the next two decades he climbed his way up the ranks, working for Kellogg's in Canada, Mexico, Australia, and the United States. In Mexico he transformed Kellogg's worst-performing plant into one that clinched the top spot in productivity and cleanliness. He did so by empowering employees, making them feel they mattered in a way they had not experienced before.



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While traveling the world he learned new ideas and shared them with others. In 1999 he became Kellogg's president and chief executive officer. One of his most difficult decisions was to close Kellogg's corn flakes factory which had opened in the early 1900s. Although closure of the plant saved the company tens of millions of dollars each year, more than 500 people lost their jobs. "I was given the job to make difficult decisions. I felt it was my duty to do it. The worst thing I could have done for all the company's employees and the community was not to act. Eventually, we would have had to pay for not acting," he said of his decision.

Gutierrez's career turned toward the public sector in 2005 when President George W. Bush named him Secretary of the U.S. Department of Commerce. The department's objective is to promote American business at home and abroad, and Gutierrez became the voice of business in the U.S. government. In nominating Gutierrez, President Bush said, "He understands the world of business, from the first rung on the ladder to the very top. He knows exactly what it takes to help American businesses grow and to create jobs."

SOURCE READING

Log on to the Kellogg's web site through thomsonedu.com/school/econxtra. Click on *careers*, and then on *U.S. career opportunities*. How has Kellogg's organized career information to help potential employees achieve their goals?

Sources: U.S. Department of Commerce: www.commerce.gov/bios/Gutierrez_bio.htm; *Latino Leaders* magazine, December, 2003: www.findarticles.com/p/articles/mi_m0PCH/is_6_4/ai_113053399

ENTREPRENEURS IN ACTION

In small groups, discuss ways in which Gutierrez's business background at Kellogg's would help him to lead the U.S. Department of Commerce.

3.3 Public Goods and Externalities

Objectives

- Describe and provide examples of four types of goods.
- Define negative externalities and positive externalities, and discuss why government intervenes in such markets.

Overview

Government focuses on improving the performance of the private sector—enforcing property rights, promoting competition, regulating natural monopolies, and smoothing out the national economy's ups and downs. However, the private sector can't profitably supply some goods that people want. The government is in a better position to supply goods such as national defense or a highway system. What's more, the private sector sometimes affects people not involved in the market transaction, such as the factory that pollutes the air breathed by nearby residents. In such cases, the government often intervenes to improve the market's performance.

Key Terms

private goods

public goods

quasi-public goods

open-access goods

negative externalities

positive externalities

In the News

Dams, Locks, and Tradeoffs on the Ohio

Today the Ohio River is a 941-mile series of pools regulated by 20 dams that are built and maintained by the United States Army Corps of Engineers. The dams were built over the last century to provide a navigable river for shipping and recreation. Following a $51 million study, the Corps now is proposing a $350 million expansion of several locks along the river. The locks are used to move vessels through the dams. Environmental groups criticize the proposal for expanded locks as unnecessary. They argue that it threatens the recreational use of the river and will damage the environment. The Corps argues that the upgrades are necessary to maintain a system that in some places is nearly 100 years old. They note that the improvements would shorten the delays of barges moving along the river. Opponents of the project counter that the price tag is too high, and that the Corps is overestimating the need for the new locks. They argue that barge shipping along the river has seen no growth in the last 15 years. The Corps disagrees and forecasts increased barge traffic.

THINK ABOUT IT

Can public goods provide both positive and negative externalities? Does it matter who is affected? Who might be affected both positively or negatively by the improvements in the Ohio River locks?

Sources: Dan Klepal, "River Study Flawed, Groups Say," *Cincinnati Enquirer,* April 12, 2006; "Plan to Expand River Locks Attacked," *Cincinnati Post,* April 12, 2006.

Private Goods, Public Goods, and In Between

So far this book has been talking mostly about private goods, such as tacos, toasters, and telephone service. Other categories of goods exist as well. At the other extreme are public goods, with various categories in between, including quasi-public goods and open-access goods.

Private Goods

private goods
Goods with two features: (1) the amount consumed by one person is unavailable to others and (2) nonpayers can easily be excluded

Private goods have two important features. First, they are *rival in consumption*. This means that the amount consumed by one person is unavailable for others to consume. For example, when you and some friends share a pizza, each slice they eat is one less available for you. A second key feature of a private good is that suppliers can easily exclude those who don't pay, so a private good is said to be *exclusive*. Only paying customers get a pizza. Thus a private good is both *rival* and *exclusive*.

Public Goods

public goods
Goods that, once produced, are available to all, but nonpayers are not easily excluded

In contrast to private goods, **public goods**, such as national defense, the Centers for Disease Control, or a neighborhood mosquito-control program, are nonrival in consumption. One person's benefit does not reduce the amount available to others. Such goods are available to all in equal amount. The marginal cost of providing the good to an additional consumer is zero.



In small groups, brainstorm a list of public goods that you and your families consume. Make sure that each good you list is both nonrival and nonexclusive.

Public goods cannot be provided through the market system because of the problem of who would pay for them. Public goods are both nonrival and nonexclusive. Once produced, public goods are available for all to consume, regardless of who pays and who doesn't. As a consequence, for-profit firms cannot profitably sell public goods. For example, if a private firm were to spray a neighborhood for mosquitoes, all of the households in the neighborhood would benefit. However, some households might not be willing to pay, figuring that they would still benefit from the spraying. These households would be called *free riders*. If this service is provided by a local government, all the households would pay for it with their tax money.

The government provides public goods and funds them through enforced taxation. Sometimes nonprofit agencies also provide public goods, funding them through charitable contributions and other revenue sources.

Quasi-Public Goods

quasi-public goods
Goods that, once produced, are available to all, but nonpayers are easily excluded

The economy consists of more than just private goods and public goods. Some goods are nonrival but exclusive. For example, additional households can tune to a TV show without harming the TV reception of other viewers. Television signals are nonrival in consumption. Yet the program's producer can make viewers "pay" for the show, either by adding commercials or by charging each household for the show, as with cable TV and pay per view. So the TV signal is nonrival but exclusive. Goods that are nonrival but exclusive are called **quasi-public goods**.

Open-Access Goods

Finally, some other goods are *rival* but *nonexclusive*. The fish in the ocean are rival because every fish caught is not available for others to catch. The same goes for migratory game, like wild geese. Ocean fish and migratory game are nonexclusive in that it would be costly or impossible for a private firm to prevent access to these goods. Goods that are rival but nonexclusive are called



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Some households receive television signals through satellite-dish technology. What type of good is the television signal that is received this way? Explain your answer.

open-access goods because it would be difficult and costly to block access to these goods.

In the absence of any regulations, open-access goods are overfished, overhunted, and overused. For example, the United Nations reports that 11 of the world's 15 primary fishing grounds are seriously depleted.

By imposing restrictions on open-access resource use, governments try to keep renewable resources from becoming depleted. Output restrictions are aimed at reducing resource use to a sustainable rate. For example, in the face of the tendency to overfish, governments now impose a variety of restrictions on the fishing industry.

Summary Table

Figure 3.3 summarizes the four types of goods in the economy. Across the top, goods are either *rival* or *nonrival,* and along the left margin, goods are either *exclusive* or *nonexclusive.* Private goods usually are provided by the private sector. Quasi-public goods are sometimes provided by government, as with a municipal golf course, and sometimes provided by the private sector, as with a private golf course. Government usually regulates open-access goods, such as with fishing licenses. Government usually provides public goods, funding them with enforced taxation.

open-access goods
Goods that are rival in consumption but exclusion is costly

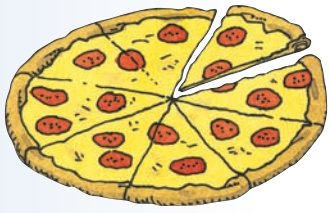
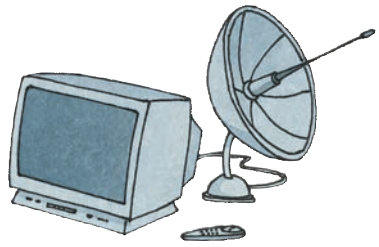
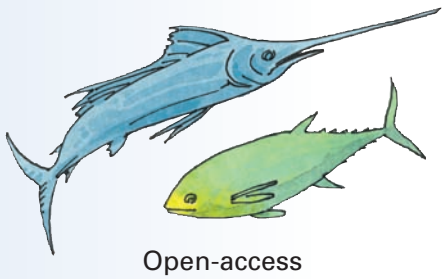
✓ CHECKPOINT

Name the four categories of goods, and provide an example of each.

Externalities

The rivers in Jakarta, Indonesia, are dead—killed by acid, alcohol, and oil. Some coral reefs in the South Pacific have been ripped apart by dynamite fishing. The air in some U.S. cities does not meet health standards. These are all examples of *negative externalities,* which are by-products of production and consumption. Some externalities are

Categories of Private and Public Goods — **Figure 3.3**

	Riva	Nonrival
Exclusive	 Private	 Quasi-public
Nonexclusive	 Open-access	 Public

The four types of goods—private, quasi-public, open-access, and public—are characterized as being either rival or nonrival in consumption and either exclusive or nonexclusive. Think of two more examples for each type of good.

positive. For example, if you get vaccinated, you reduce your chances of contracting that disease. However, you also reduce the chances that others will catch it from you, so they benefit, too. *The private sector, operating on its own, produces too many negative externalities and too few positive externalities.* Government intervenes in the market to improve the outcome.

negative externalities
By-products of production or consumption that impose costs on third parties, neither buyers nor sellers

Negative Externalities

A renewable resource can be used indefinitely if used conservatively. Some renewable resources also are open-access resources, and this creates a special problem for the environment. The atmosphere and waterways are renewable resources to the extent they can absorb and neutralize a certain level of pollutants yet still remain relatively clean.

Negative externalities generally are by-products of production or consumption that impose costs on third parties (those who are neither buyer nor seller in the transaction). For example, some spray cans once released chlorofluorocarbons into the atmosphere, affecting those not directly involved in the purchase or sale of the spray cans. These gases were suspected of causing a thinning of the ozone layer that protects people from the sun's ultraviolet rays. The use of chlorofluorocarbons as a propellant in aerosol cans now is outlawed in the United States.

NETBookmark

Federal efforts to address negative externalities that harm the air, water, and soil are coordinated by the Environmental Protection Agency (EPA). Access the EPA web site through thomsonedu.com/school/econxtra. Identify four of the major U.S. environmental laws.

thomsonedu.com/school/econxtra

Correcting for Negative Externalities

Polluters of the atmosphere, waterways, and other open-access resources tend to ignore the impact of their pollution on other people and on the resource's ability to renew itself. Therefore, the quality and quantity of an open-access resource tends to decline over time.

Government restrictions can improve the allocation of open-access resources. For example, antipollution laws limit the kind and amount of gases that can be released into the atmosphere from factories, automobiles, and other pollution sources. Restrictions aimed at maintaining water quality limit what can be dumped into the nation's rivers, lakes, and oceans. Noise restrictions aim at maintaining the peace and quiet. Local zoning laws limit where firms can locate and in what condition homes must be maintained. In short, government restrictions try to reduce negative externalities.

Market prices can direct the allocation of resources as long as property rights are well defined and can be enforced at a reasonable cost. Pollution of open-access resources such as air, land, water, peace and quiet, and scenery arises due to overuse.

Positive Externalities

Some externalities are positive, or beneficial. **Positive externalities** occur when the by-products of consumption or production benefit third parties—those who are neither buyers nor sellers in the transaction. For example, people who get inoculated against a disease reduce their own likelihood of contracting the disease. In the process they also reduce the risk of transmitting the disease to others. Inoculations thus provide external benefits on others.

positive externalities

By-products of consumption or production that benefit third parties, who are not buyers or sellers

Education also generates positive externalities. Society as a whole receives external benefits from education because those who acquire more education become better citizens, can read road signs, and become more productive workers who are better able to support themselves and their families. Educated people also are less likely to require public assistance or to resort to crime for income. Thus, education

ETHICS IN ACTION

Environmental Quality and America's Oil Supply

Oil drilling in the Arctic National Wildlife Refuge has long been an issue debated by environmentalists and supporters of development. Supporters of development note that the drilling would potentially affect only 10 percent of the refuge, while the size of the oil pool under the refuge could be between 5 and 10 billion barrels of oil. This represents more than a year's supply of oil for a country that now relies heavily on the uncertainty of foreign imports for the 20 million barrels it consumes a day. Development supporters also note that the U.S. faces strong competition from China's growing thirst for oil, now at 6 million barrels a day and rising rapidly. On the other hand, environmentalists note that although the size of the refuge is as big as West Virginia, the drilling would occur along the coastal plain, an area vital to many species. They advocate developing alternative sources of energy, such as hydrogen usage, as a permanent solution to the problem.

THINK CRITICALLY

Should the drilling be allowed? Why or why not?

Sources: "ANWR Passes Senate But Still Faces Many Hurdles Ahead," *Oil Daily,* March 20, 2006; "Nussle Keeps Arctic Safe from Oil Drilling," Newswire Association LLC, March 29, 2006

Main Idea

Role of Government



Government plays an economic role in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, make markets more competitive, and redistribute income. **In each of these cases, how do you think the benefits of the government policies outweigh their costs?**

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benefits those getting the education, but it also confers benefits on others.

When there are positive externalities, governments aim to increase the level of production beyond what would be chosen privately. For example, governments try to increase the level of education by providing free primary and secondary education, by requiring students to stay in school until they reach 16 years of age, by subsidizing public higher education, and by offering tax breaks for some education expenditures.

✓ CHECKPOINT

What are negative externalities and positive externalities, and why does government intervene to regulate them?

Assessment 3.3

Key Concepts

Xtra! Study tools
thomsonedu.com/school/econxtra

1. In 2002, there was a debate over whether smallpox vaccinations should be given to the general public. Are vaccinations an example of a *public good.* Why or why not?
2. Identify and describe an example of each of the following types of goods that you encounter in your life.
   a. Private good
   b. Quasi-public good
   c. Open-access good
   d. Public goods
3. Describe an example of a negative externality that has been a problem in your community.
4. Describe steps that have been taken in your community to try to eliminate or reduce the negative externality you identified in exercise 3 above.

Graphing Exercise

5. Construct a pie chart for 1990 and another for 2000 that show federal spending on natural resources and the environment. Base your charts on the data in the table. What parts of this spending may have been dedicated to trying to reduce negative externalities?

Federal Spending for Natural Resources and the Environment 1990–2000
Amounts in billions of dollars

Type of Spending	1990	% of total	2000	% of total
Water resources	$ 4.4	25.7%	$ 5.1	20.6%
Conservation	3.6	21.1	5.9	23.8
Recreation	1.9	11.1	3.4	13.7
Pollution control	5.2	30.4	7.4	29.8
Other	2.0	11.7	3.0	12.1
Total	$17.1	100.0	$24.8	100.0

Source: *Statistical Abstract of the United States,* 2001, p. 307.

Think Critically

6. **Government** Determine the open-access goods that exist in your county or state. Investigate whether the county or state government regulates these goods. If they do, what are the regulations? If not, why do you think these goods are not regulated?
7. **Business Management** Although trucks powered by natural gas are expensive to purchase, they create little pollution when they are operated. Why do you think some states have passed laws that give tax reductions to businesses that use natural gas-powered trucks? Explain how this is an effort by these states to reduce a negative externality. Do you think this is a good idea?

3.4 Providing a Safety Net

Objectives

- Determine why incomes differ across households, and identify the main source of poverty in the United States.
- Describe government programs that provide a safety net for poor people.

Overview

Operating on its own, the private sector offers no guarantee that everyone will earn enough to survive. Some people may have few resources that are valued in the market. Because markets do not assure even a minimum level of income, society has made the political choice that poor families should receive short-term public assistance, or welfare. This assistance reflects society's attempt to provide a social safety net. However, public assistance could reduce incentives to work, because welfare benefits decrease as earnings from work increase.

Key Terms

median income

social insurance

income-assistance programs

In the News

Good News/Bad News for U.S. Kids

In 2005, the Federal Interagency Forum on Child and Family Statistics issued a report on the health, economics, and education of some 73 million children in the United States. While the infant mortality rate remained near its record low for the first time in decades, it increased slightly to 7.0 deaths per 1,000 babies in 2002. In another trend, the percentage of children covered by health insurance dropped for the first time since 2000. Also, the percentage of children ages 6 to 8 who were overweight increased to 16 percent from 6 percent from 1976–1980. While the percent of children living in poverty rose to 18 percent from its 2000 low of 16 percent, this was still below the high of 22 percent in 1993. On a positive note, math scores for 4th and 8th grade students rose to their highest levels; deaths from firearm injuries were about half their 1995 level; and children's exposure to secondhand smoke dropped. The teenage birth rate dropped to the lowest level ever recorded, as did illegal drug use among 8th graders. Smoking among teens stopped dropping (but remained low) and the percentage of students who drink alcohol also remained stable.

THINK ABOUT IT

What do the above statistics say about the social safety net in the United States?

Source: *America's Children: Key National Indicators of Well Being 2005,* Federal Interagency Forum on Child and Family Statistics, Washington, D.C.: U.S. Government Printing Office.

Income and Poverty

In a market economy, income depends primarily on earnings, which depend on the value of each person's contribution to production. The problem with allocating income according to productivity is that some people are not able to contribute much value to production. Individuals born with mental or physical disabilities tend to be less productive and may be unable to earn a living. Others may face limited job choices and low wages because of advanced age, poor health, little education, discrimination, bad luck, or the demands of caring for small children. Consider first why incomes differ across households.

Why Household Incomes Differ

The **median income** of all households in the economy is the middle income when incomes are ranked from lowest to highest. In any given year, half the households are above the median income and half are below it.

The main reason household incomes differ is that the number of household members who are working differs. For example, the median income for households with two earners is nearly double that for households with only one earner and about four times that for households with no earners. Household incomes also differ for all the reasons that labor earnings differ, such as differences in education, ability, job experience, and so on.

At every age, people with more education earn more on average. For example, those with a professional degree earn about four times as much as those with only a high school education. Age itself has an important effect on income. As workers mature, they typically acquire valuable job experience, get promoted, and earn more.

Differences in earnings based on age and education reflect a normal life-cycle pattern of income. In fact, most

NET Bookmark

Data and reports about income distribution can be found at the U.S. Census Bureau's web site. Access this web site through thomsonedu.com/school/econxtra. Click on the link to Frequently Asked Questions. Write down five statistics you learned about income in the United States.

thomsonedu.com/school/econxtra

median income

The middle income when a group of incomes is ranked from lowest to highest

Ask the Xpert!

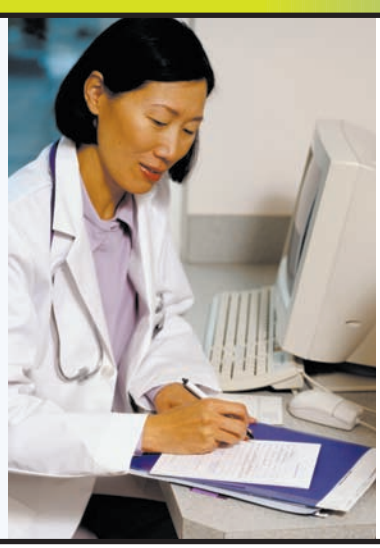
thomsonedu.com/school/econxtra

Will there always be poverty?

Main Idea

Role of Resources in Determining Income

Income for most people is determined by the market value of the productive resources they sell. What they earn depends on the market value of what they produce and how productive they are. **What are the products of the two people shown in the photos? Which one do you think should earn more than the other, and why?**



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income differences across households reflect the normal workings of resource markets, whereby workers are rewarded according to their productivity. Because of these lifetime patterns, it is not necessarily the same households that remain rich or poor over time. There is much income mobility among households.

Despite this mobility over time, generalizations can be made about rich and poor households at a point in time. High-income households typically consist of well-educated couples with both spouses employed. Low-income households typically are headed by a single mother who is young, poorly educated, and not in the labor force.

Young, single motherhood is a recipe for poverty. Often the young mother drops out of school, which reduces her future earning possibilities when and if she seeks work outside the home. Even a strong economy is little aid to households with nobody in the labor force.

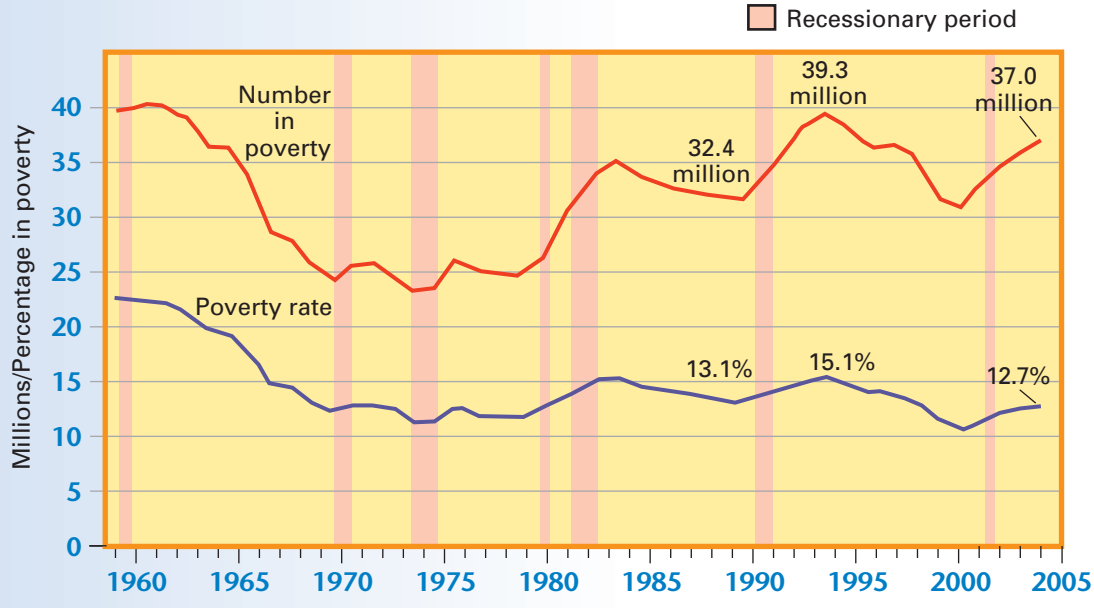
Official Poverty Rate

Because poverty is such a relative concept, how can it be measured objectively over time? The federal government determines the official poverty level and adjusts this benchmark over time to account for inflation. For example, the official poverty level for a family of four was $19,307 in 2004.

U.S. poverty since 1959 is presented in Figure 3.4. Poverty is measured both in millions of people living below the official poverty level and the percentage of the U.S. population below that level. Periods of U.S. recession are shaded as pink bars. A *recession* is defined as a decline in the nation's total production that lasts at least six months. Note that poverty increases during recessions.

The biggest decline in U.S. poverty occurred before 1970. The poverty rate dropped from 22 percent in 1959 to 12 percent in 1969. During that period, the number of poor people decreased from

Number and Percentage of U.S. Population in Poverty: 1959–2004 **Figure 3.4**



On the line graph, the "number in poverty" line shows how many millions of people were living below the official poverty level. The "poverty rate" line shows the percentage of the U.S. population below that level. Periods of U.S. recession are shaded. What happens to the number in poverty and the poverty rate during a recession?

Source: U.S. Census Bureau, *Income, Poverty, and Health Insurance Coverage in the United States: 2004,* Current Population Reports, August 2005, Table B-1, www.census.gov/prod/2005pubs/p60–229.pdf.

about 40 million to 24 million. More recently, the rate declined from 15.1 percent in 1993 to 11.3 percent in 2000 and then rose to 12.7 percent by 2004. The 37 million people in poverty in 2004 was still 2 million below the 1993 level.

Poverty is a relative term. If you examined income differences across countries, you would find huge gaps between rich and poor nations. The U.S. official poverty level of income is many times greater than the average income for most of the world's population. Many other countries set a much lower income level as their poverty level. For example, the poverty level for a family of four in the United States in 2004 worked out to be about $13 per person per day. The poverty level used in many developing countries around the world is $1 per person per day.

Poverty and Marital Status

One way of measuring poverty is based on the marital status of the household head. Figure 3.5 compares poverty rates during the last three decades for

1. families headed by females with no husband present
2. families headed by males with no wife present
3. married couples

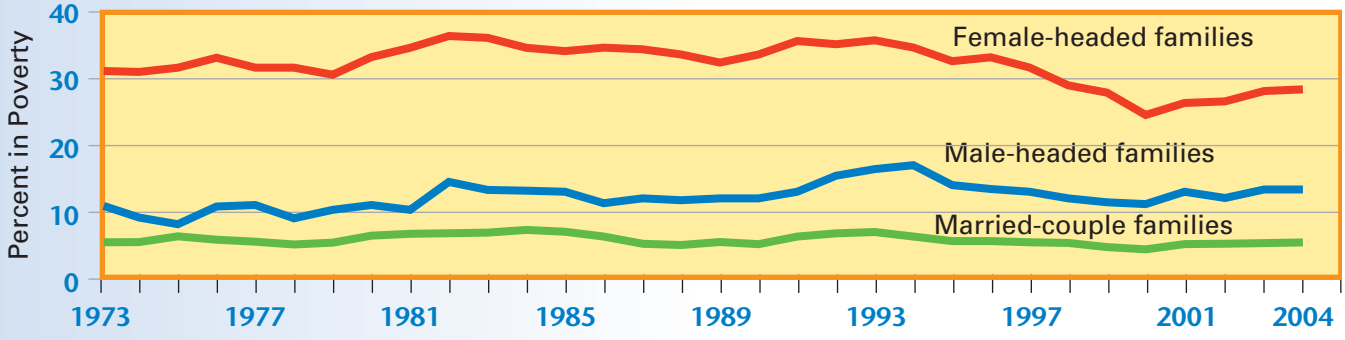
Three trends are clear. First, poverty rates among female-headed families are five to six times greater than rates among married couples. Second, poverty rates among female-headed families are two to three times greater than those for male-headed families. And third, since the mid-1990s, poverty rates have trended down for all types of families, before rising due to the recession of 2001.

The percentage of births to unmarried mothers is five times greater today than in 1960. Many of these births are to teenage mothers. The United States has the highest teenage pregnancy rate in the developed world—twice the rate of Great Britain and more that 12 times that of Japan. Because the father in such cases typically assumes little responsibility for child support, children born outside marriage are much more likely to be poor than other children. Births to single mothers make up the primary source of poverty in the United States.

✓CHECKPOINT

Why do incomes differ across households, and what is the main source of poverty in the U.S. economy?

U.S. Poverty Rates and Types of Households **Figure 3.5**



Female-headed families have the highest poverty rate in the United States, followed by male-headed families and married couples.

Source: Developed from U.S. Census Bureau, *Income, Poverty, and Health Insurance Coverage in the United States: 2004,* Current Population Reports, August 2005, Table B-3.

Programs to Help the Poor

What should be society's response to poverty? Families with a full-time worker are nine times more likely to escape poverty than are families with no workers. Thus, the government's first line of defense in fighting poverty is to promote job opportunities. Yet even when the unemployment rate is low, some people still remain poor.

Since the 1960s, spending for income redistribution at all levels of government has increased significantly. These programs divide into two broad categories: social insurance and income assistance.

social insurance
Cash transfers for retirees, the unemployed, and others with a work history and a record of contributions to the program

income-assistance programs
Government programs that provide money and in-kind assistance to poor people

Social Insurance

Social insurance programs are designed to help make up for the lost income of people who worked but are now retired, temporarily unemployed, or unable to work because of disability or work-related injury. The federal government funds all these programs. The major social insurance program is Social Security, established during the Great Depression of the 1930s. *Social Security* provides retirement income for those with a work history and a record of making payments to the program.

Medicare, another social insurance program, provides health insurance for short-term medical care, mostly to those age 65 and older, regardless of income. There were more than 45 million Social Security and Medicare beneficiaries in 2004.

The social insurance system tends to redistribute income from rich to poor and from young to old. Most current Social Security beneficiaries will receive far more in benefits than they paid into the program, especially those with a brief work history or a record of low wages.

Other social insurance programs include unemployment insurance and workers' compensation, which supports workers injured on the job. Both programs require that beneficiaries have a prior record of employment.

Income-Assistance Programs

Income-assistance programs—typically called *welfare programs*—provide money and in-kind assistance to poor



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Medicare is a social insurance program that provides health insurance for short-term medical care, mostly to people age 65 and older. Why do you think this insurance is provided regardless of income level?

people. In-kind assistance is help in the form of goods and services. Programs that pay money directly to recipients are called cash transfer programs. Other forms of assistance, such as with housing and healthcare, are provided through in-kind transfer programs.

Unlike social insurance programs, income-assistance programs do not require a work history or a record of contributions. Instead, income-assistance programs are means tested. In a *means-tested program,* a household's income and assets must fall below a certain level to qualify for benefits. The federal government funds two-thirds of welfare spending, and state and local governments fund one-third.

CASH TRANSFER PROGRAMS

The two main cash transfer programs are *Temporary Assistance for Needy Families (TANF),* which provides cash to poor families with dependent children, and *Supplemental Security Income (SSI),* which provides cash to the elderly poor and the disabled. Cash transfers vary inversely with family income from other sources. The federal government gives each state a fixed grant to help fund TANF programs. Each state determines eligibility standards.

The SSI program provides support for the elderly and disabled poor, including people addicted to drugs and alcohol, children with learning disabilities, and, in some cases, the homeless. SSI is the fastest-growing cash transfer program, with outlays of $36 billion in 2004, double the TANF outlays that year.

IN-KIND TRANSFER PROGRAMS

A variety of *in-kind transfer programs* provide goods and services such as food stamps, healthcare, housing assistance, and school lunches to the poor. *Medicaid* funds medical care for those with incomes below a certain level who are elderly, blind, disabled, or are living in families with dependent children. *Medicaid is the largest welfare program, costing nearly twice as much as all cash transfer programs combined.* It has grown more than any other poverty program, quadrupling in the last decade and accounting for nearly one-fifth of the typical state's budget. States get federal grants covering half or more of their Medicaid budget.

The qualifying level of income is set by each state. Some states are quite strict. Therefore, the proportion of poor covered by Medicaid varies greatly across states. In 2004, more than 40 million people received free medical care under Medicaid at a total cost of more than $250 billion. Outlays averaged more than $6,000 per recipient.

In all, there are about 75 means-tested federal welfare programs. To get some idea of how much the federal government spends on programs to help the poor, also called *income redistribution programs,* look at Figure 3.6. This figure shows the composition of federal outlays since 1960. As you can see, income redistribution, including Social Security, Medicare, and various welfare programs, increased from about one-fifth of federal outlays in 1960 to about half by 2007. Conversely, defense spending fell from more than half of federal outlays in 1960 to about one-fifth by 2007. Thus, income redistribution claims a growing share of the federal budget.

Earned-Income Tax Credit

The *earned-income tax credit* supplements wages of the working poor. For example, a family with two children and earning $13,000 in 2004 would not pay federal income tax and would receive a cash transfer of about $4,400. The idea is to increase income and to provide incentives for people to work. More than 21 million working families received such transfers in 2004, requiring federal outlays exceeding $40 billion.

Welfare Reform

The biggest reform of the welfare system in the last 60 years came with 1996 legislation that created the current system, Temporary Assistance for Needy Families (TANF). The earlier program established eligibility rules that guaranteed the federal government would pay most of the cost. Families could stay on welfare for a decade or more. Under the

new system, states get a fixed amount of aid from the federal government and can run their own welfare programs. The system requires welfare recipients to look for jobs and limits cash transfers to five years.

About half the states impose time limits shorter than five years. Some observers fear that states now have an incentive to keep welfare costs down by cutting benefits. To avoid becoming destinations for poor people—that is, to avoid becoming "welfare magnets"—states may be tempted to offer relatively low levels of benefits.

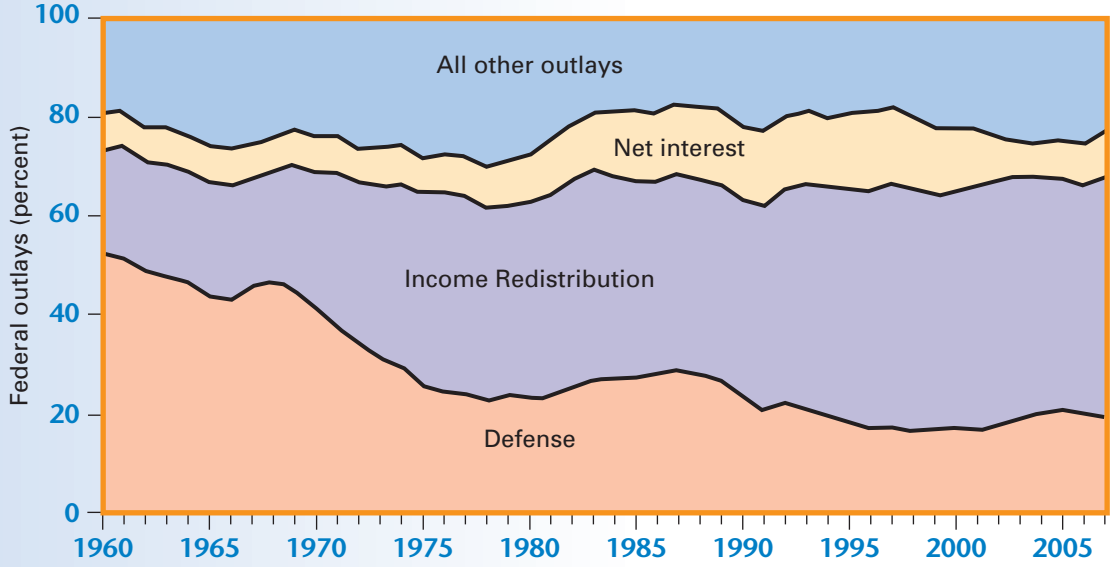
Welfare reform has reduced welfare rolls and increased employment. However, because most people on welfare are poorly educated and have few job skills, wages for those who find jobs remain low. Part-time work also is common, as is job loss among those who initially find jobs.

On the plus side, however, the earned-income tax credit provided up to $4,400 in 2004 in additional income to low-income workers. Most of those going to work also can receive food stamps, child care, and Medicaid.

✓ CHECKPOINT

What are the main government programs that try to offer a safety net?

Income Redistribution as a Percentage of All Federal Outlays: 1960-2007 — **Figure 3.6**



Since 1960, spending on income redistribution has increased and spending on defense has decreased as a share of federal outlays.

Source: Computed based on figures from the *Economic Report of the President,* February 2006, Table B-80. Access the most current report through thomsonedu.com/school/econxtra.

Sharpen Your Skills



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Use Mathematics to Draw Conclusions

Federal, state, and local governments receive a large part of the income that is generated from production in the U.S. economy. Some of the government's revenue is used to purchase goods or services while other parts become transfer payments. Welfare, Social Security, and unemployment compensation payments are examples of government transfers of income to individuals. Use data in the table below to calculate the percent of total income earned from production that has flowed through the government in recent years. What conclusions could you draw from these data about the importance of government in deciding how income in our nation will be used?

Apply Your Skill

1. Assume that all people currently alive will live to an age of at least 67. Use the *Statistical Abstract of the United States* to find the approximate number of people who will become eligible for Social Security benefits (67 years of age) in the 2010s, 2020s, and 2030s. Do this by finding the number of people who are currently in age groups that will reach 67 in each of these decades. Explain why these data indicate that government spending for Social Security and Medicare insurance is likely to grow as a share of total income in the future.
2. In 2000, the federal government's spending for national defense totaled $294.5 billion, or about 3 percent of the value of all production in the U.S. economy during that year. If spending for defense had grown by 5 percent in each of the following five years, how much would it total by 2005? If the value of total U.S. production increased by 3 percent in each of these years, what would happen to the share of that production that would have been devoted to our national defense?

Government Spending and Transfers as a Percent of Total Production, 1980–2000
Values in billions of dollars

Year	Government Spending and Transfers	Value of Total Production	Government Spending & Transfers as a Percent of Total Production
1980	$ 812.0	$2,795.8	_____
1990	$1,778.0	$5,803.2	_____
2000	$2,772.5	$9,963.1	_____

Assessment 3.4

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Key Concepts

1. Explain why a pure market economy would not work well if all people were guaranteed the same income by the government.
2. Why is *poverty* a relative term?
3. Think of a person you know who you think lives in poverty. What steps could the government take to help this person escape poverty? Do you think the government should do these things? Would you be willing to pay more taxes to support this type of help?
4. Why do you think that spending for Medicare is the most rapidly growing part of the social insurance program?
5. Between 1996 and 2002 the number of welfare cases in the United States fell by more than half. Explain why this does not necessarily mean that the number of people living in poverty was also cut in half during these years.

Graphing Exercise

6. Draw a double line graph of the percent of U.S. residents and children who were officially designated as living in poverty from 1995 through 2003, based on the data in the table to the right. As a percent, why do more children live in poverty than adults?

Percent of U.S. Residents and Children Living in Poverty, 1995-2003

Year	% of total population living in poverty	% of children living in poverty
1995	13.8%	20.2%
1997	13.3%	19.2%
1999	11.9%	16.6%
2001	11.7%	15.8%
2003	12.5%	17.2%

Source: *Statistical Abstract of the United States,* 2006, p. 472.

Think Critically

7. **English** Read *The Grapes of Wrath* by John Steinbeck or a summary of this novel. This book describes what it was like for poor people to live through the Great Depression of the 1930s. Describe why these conditions led the government to create many of the programs that help people living in poverty today.
8. **Research** Find current data concerning poverty as it relates to education, race, and age by searching the Internet for the *Statistical Abstract of the United States.* Look for useful data in a table titled "Families Below Poverty Level by Selected Characteristics" in the *Income, Expenditures, and Wealth* section of the *Abstract*. What relationships can you draw see in these data?

CONNECT TO HISTORY



The Commerce Clause

In September, 1786, at a meeting held in Annapolis, Maryland, delegates from five states met to discuss the problems of interstate commerce. Realizing that the problems were beyond their power to resolve, the Virginia delegation and Alexander Hamilton called for a general convention to be held in Philadelphia the next year. When the convention met on May 25, it was with the purpose of revising the Articles of Confederation. The delegates decided to abandon the Articles and write a new plan of government. By September 17, the 55 delegates representing 12 of the 13 states had drafted the U.S. Constitution. Although inspired by economic circumstances, the U.S. Constitution is not just an economic document. Even so, the Constitution contains the basis of the country's economic success.

Much of the federal government's regulatory power comes from Article 1, Section 8—the Commerce Clause—of the U.S. Constitution. This section states that Congress shall have the power to "regulate commerce with foreign nations, and among the several states, and with Indian tribes." The first major case involving the Commerce Clause was *Gibbons v. Ogden*. In its decision the U.S. Supreme Court, led by Chief Justice John Marshall, established the government's right to regulate interstate commerce. However, Marshall didn't stop there. He used the case as an opportunity to expand the power of the federal government by broadening the definition of commerce. Reading the phrase "to regulate commerce . . . among the several states," Marshall rejected the notion that "commerce" meant only the transportation of goods across state lines for sale. In his opinion, the term "commerce" came to include nearly every commercial activity that sooner or later will include the transportation of persons, things, services, or power across state lines. This opinion was confirmed by subsequent Court rulings.

The 1887 Interstate Commerce Act, which created the Interstate Commerce Commission (ICC), and the Sherman Antitrust Act (1890) were the federal government's first major use of the Commerce Clause as the authority for its regulation of the economy. This introduced the Progressive Era of the early twentieth century, which saw the government increase its regulatory power with the Hepburn Act (1906), the Mann-Elkins Act (1910), and the creation of the Federal Trade Commission (1914). The Commerce Clause has been used as justification to expand government into many aspects of the national life and economy. For example, it has been used to justify laws prohibiting child labor, to regulate business-labor relations, to create a federal minimum wage, and to prosecute gangsters.

The Commerce Clause was the subject of more Supreme Court cases between 1789 and 1950 than any other Constitutional clause. The Court's actions have made it an important, if not *the most* important, source of government power over the economy. President Ronald Reagan tried to roll back some of that power in the 1980s, when he attempted to abolish the Interstate Commerce Commission (ICC). He argued that deregulation had made the agency unnecessary. Congress refused to go along. Today the power of the federal government to regulate any business activity that even remotely affects interstate commerce seems well established.

THINK CRITICALLY

Read and analyze the Fifth Amendment and the rest of the Commerce Clause of the U.S. Constitution. What parts of these affect the U.S. economic system and how?

3 Chapter Assessment

Summary

3.1 The U.S. Private Sector

a There are four groups of decision makers in the U.S. economy: *households, firms, government,* and *the rest of the world.*

b Firms expanded their importance in the economy during the Industrial Revolution. By gathering factors of production into one location, businesses are able to create a more efficient *division of labor.*

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c Decisions made by the rest of the world affect the consumption and production of U.S. households. The United States buys goods from other nations that have lower opportunity costs of production and sells goods that have lower opportunity costs to U.S. producers.

3.2 Regulating the Private Sector

a The private sector of the U.S. economy would not run smoothly without some government regulation. Economic rules created and enforced by the government set standards for quality and weights and measures, and protect property rights and consumer safety.

b The federal government promotes competition in the market and limits monopoly power through enforcing *antitrust laws* and regulating *natural monopolies.*

c The government promotes economic growth and stability through *fiscal* and *monetary policies.* Fiscal policy uses taxes and public spending to influence economic conditions. Monetary policy adjusts the amount of money in the economy to influence interest rates, borrowing, spending, and production.

3.3 Public Goods and Externalities

a All goods can be classified as *private goods, public goods, quasi-public goods,* or *open-access goods.*

b Public goods are nonrival and nonexclusive. If a public good is used by one person, that does not prevent another from benefiting from using it.

c Quasi-public goods are nonrival but exclusive. The use of a public park by one person does not prevent others from enjoying it, too, unless it becomes very crowded. The government, however, may impose a fee to enter the park, which makes it exclusive for those who choose to pay.

d Open-access goods are rival but nonexclusive. If you collect seashells at the beach, the shells you gather cannot be collected by others, but you are free to collect as many as you can find.

e *Negative externalities* are costs of production that are imposed on people who are neither the producer nor the consumer of the product.

3.4 Providing a Safety Net

a In a pure market economy, people would receive income in proportion to the value of their contribution to production. Individuals unable to work could fall into poverty and starve. The U.S. government provides social services for those who otherwise might live in poverty.

b The official poverty rate in the United States declined in most years since the government began to measure poverty. Poverty is most common among households headed by single mothers.

c The government has established many programs to help specific groups of people. Among these are *social insurance programs, income-assistance programs, the earned-income credit for federal income tax,* and *in-kind transfers*.

d The nation's *welfare programs* were re-formed in 1996, when the Temporary Assis-tance for Needy Families Program was created.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms will not be used.

_____ **1.** The satisfaction received from consumption

_____ **2.** Laws that prohibit anticompetitive behavior and promote competition

_____ **3.** Legal claims that guarantee an owner the right to use a good or resource exclusively or to charge others for its use

_____ **4.** The federal government's use of taxing and public spending to influence the national economy

_____ **5.** The Federal Reserve System's attempts to control the money supply to influence the national economy

_____ **6.** One firm that can serve an entire market at a lower per-unit cost than can two or more firms

_____ **7.** A good with two features: (1) the amount consumed by one person is unavailable to others and (2) nonpayers can easily be excluded

_____ **8.** A good that, once produced, is available for all to consume, but the producer cannot easily exclude nonpayers

_____ **9.** A good that is rival in consumption but exclusion is costly

_____ **10.** By-products of consumption or production that benefit third parties, who are not buyers or sellers.

a. antitrust laws
b. firm
c. fiscal policy
d. household
e. income-assistance programs
f. Industrial Revolution
g. median income
h. monetary policy
i. natural monopoly
j. negative externalities
k. open-access good
l. positive externalities
m. private good
n. private property rights
o. public good
p. quasi-public good
q. social insurance
r. utility

Review Economic Concepts

11. All those who live under one roof are considered to be part of the same __?__.

12. Firms organizing production in large, centrally powered factories did all of the following except

a. promote a more efficient division of labor.

b. reduce transportation costs.

c. reduce consumer reliance on trade.

d. enable the use of specialized machines.

13. In the evolution of the firm, the __?__ was the bridge between the self-sufficient farm household and the modern firm.

14. Which of the following is correct?

a. Revenue = Profit − Cost of Production

b. Profit = Cost of Production − Revenue

c. Profit = Revenue − Cost of Production

d. Cost of Production = Revenue + Profit

15. **True or False** International trade occurs because the opportunity cost of producing specific goods differs among countries.

16. A(n) __?__ awards an inventor the exclusive right to produce a good for a specific period of time.

17. Which of the following is *not* a true statement about monoplies?
    a. Monopolies try to charge higher prices than would result through competition.
    b. By maximizing profits, monopolies ultimately benefit social welfare.
    c. Antitrust laws attempt to reduce monopoly power.
    d. Monopolies may try to influence the political system in order to protect and enhance their power.

18. Which of the following is the *best* example of the government regulating a *natural monopoly*?
    a. emission standards for automobiles
    b. required testing and approval to market new drugs
    c. rules for selling new shares of corporate stock
    d. set prices for distributing natural gas to homes

19. **True or False** *Public goods* can be used by all consumers and have no economic cost.

20. _?_ are nonrival but exclusive, such as cable TV signals.

21. **True or False** *Poverty* is a relative term that has different meanings at different times and in different locations.

22. Which of the following would be an example of an attempt by the Federal Reserve System to stimulate the economy through *monetary policy*?
    a. a 5 percent reduction in federal income tax rates
    b. an increase in government spending for road construction
    c. an increase in the amount of money in the economy
    d. an increase in the tax on goods purchased from other countries

23. Another term for *welfare* is
    a. job-placement program.
    b. income-assistance program.
    c. social insurance program.
    d. tax rebate program.

Apply Economic Concepts

24. **Identifying Goods** Copy the figure below. Place the letter of each of the following in the correct box of the figure.
    a. Police protection
    b. Shrimp in the ocean
    c. Public vaccinations
    d. Picnic tables in a national park
    e. Your television set
    f. An unused public tennis court
    g. Seashells on a beach
    h. Your uncle's fishing boat

	Rival	**Nonrival**
Exclusive		
Nonexclusive		

25. **Examples in Your Community** Make a second copy of the figure in exercise 24. Place two examples of each type of good that exist in your community in the appropriate boxes. Use examples that are different from those in exercise 24.

26. **Your Share of the Cost** In 2001, the cost of national defense for the United States was just over $300 billion. At that time, there were approximately 280 million people living in this country. Calculate the cost of national defense per person in 2001. Explain why it is difficult to charge individuals their "fair share" of the cost of national defense.

27. **Sharpen Your Skills—Use Mathematics to Draw Conclusions** In 2001, the value of total production in the United States was $10.442 trillion. In that year, the federal government spent or transferred $1.864 trillion. What percent of the nation's total income flowed through the federal government in 2001? The table below shows the experience over a longer period. On a separate sheet, fill in the right-hand column. What has been the trend over the period? What do these data show about the importance of federal government spending and transfers in the economy in these years? Considering recent history, would you expect this trend to continue in the future?

Government Spending and Transfers as a Percent of Total Production, 1980–2000
Values in billions of dollars

Year	Federal Government Spending and Transfers	Value of Total Production	Federal Spending & Transfers as a Percent of Total Production
1980	$ 590.9	$2,795.8	_____
1990	$1,253.1	$5,803.2	_____
2000	$1,789.2	$9,963.1	_____

Source: *Statistical Abstract of the United States,* 2006, Table 459.

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28. Access **EconData Online** at thomsonedu.com/school/econxtra. Under "Microeconomics," click on "Income Distribution and Poverty," and then "Civilian Unemployment Rate." After analyzing the information available, write a paragraph to explain why the unemployment rate is inversely related to the growth rate of real GDP over the business cycle.

Unit 2



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The Market Economy

4 Demand

5 Supply

6 Market Forces

7 Market Structure

In 1962, Sam Walton opened his first store in Rogers, Arkansas, with a sign that read: "Wal-Mart Discount City. We sell for less." Wal-Mart now sells more than any other retailer in the world because prices there are the lowest around. As a consumer, you understand why people buy more at a lower price. Wal-Mart, for example, sells on average more than 20,000 pairs of shoes *an hour*. Buyers love a bargain, but sellers must make sure their prices cover the costs of supplying the goods. Differences between the desires of buyers and sellers are sorted out by competitive pressures in a market economy.

4 Demand

4.1 The Demand Curve

4.2 Elasticity of Demand

4.3 Changes in Demand



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CONSIDER

Why are newspapers sold in vending machines that allow you to take more than one copy?

How much chocolate do you eat when you can eat all you want?

What cures spring fever?

What economic principle is behind the saying, "Been there, done that"?

Why do higher cigarette taxes cut smoking by teenagers more than by other age groups?

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4.1 The Demand Curve

Objectives

- Explain the law of demand.
- Interpret a demand schedule and a demand curve.

Overview

The primary building blocks of a market economy are demand and supply. Consumers demand goods and services that maximize their utility, and producers supply goods and services that maximize their profit. As a consumer in the U.S. market economy, you demand all kinds of goods and services. You buy less of a good when its price increases and more of it when the price decreases. This section draws on your experience as a consumer to help you understand demand, particularly the demand curve.

Key Terms

demand
law of demand
marginal utility
law of diminishing marginal utility
demand curve
quantity demanded
individual demand
market demand

In the News

Demand Rising for Digital HDTV

Sales of digital, high-definition television (HDTV) sets are gaining momentum. However, consumers are learning that the new technology's clearer picture comes in several different formats: LCD, PDP, DPL, and SED. Each format is a different technology vying for the consumer's dollar. All provide sharper pictures than the old analog televisions, but flat-paneled LCD and PDP (plasma) televisions have seen their sales increase as their prices dropped—by about 2 percent a month. Previously these sets had limited sales because of their relatively high cost. Although a small number of consumers will buy the newest technology regardless of price, most have learned that if they wait, the price will come down or yet a newer technology will emerge. Promoters of DPL technology—rear projection, which takes up more space than flat screen TVs—argue that its picture quality is as good as other HD televisions and for a lower price. Sales analysts believe that those who want large flat screens (more than 42 inches) will purchase plasma. These will appeal to those for whom price is more important than owning a flat-panel set. LCD appeals to those who want a small HD television (32 inches and below). Plasma and LCD fight it out in the 32- to 42-inch range. The newest entry into the TV technology debate is SED. It promises the clarity of plasma in a flat panel but at lower cost.

THINK ABOUT IT

How might the substitution effect come into play in the demand for televisions? How can you explain why the sales of DLP televisions dropped even as their price went down? Unlike other electronics, why does the demand for televisions remain high after Christmas?

Source: "Pondering TV Jargon—Before Buying a New Television, You've Gotta Learn the Lingo," *Buffalo News,* January 23, 2006.

Law of Demand

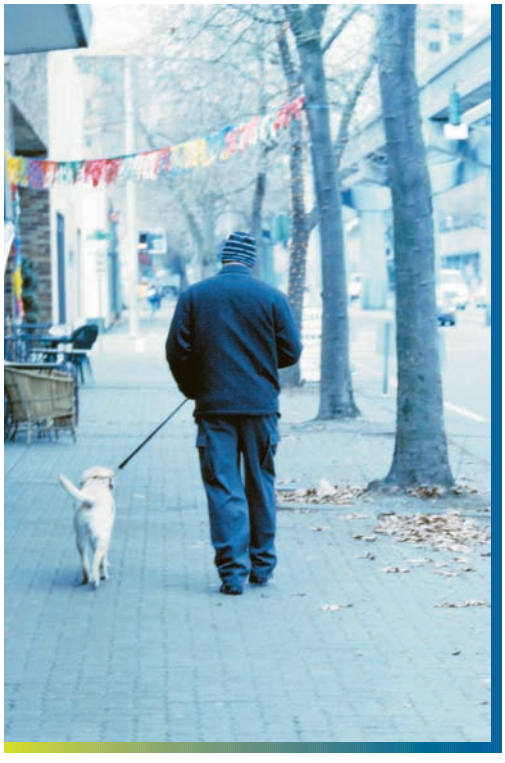
demand
A relation showing the quantities of a good that consumers are willing and able to buy at various prices per period, other things constant

law of demand
The quantity of a good demanded per period relates inversely to its price, other things constant

How many 12-inch pizzas will people buy each week if the price is $12? What if the price is $9? What if it's $6? The answers reveal the relationship between the price of pizza and the quantity purchased. Such a relationship is called the *demand* for pizza.

Demand indicates how much of a product consumers are both *willing* and *able* to buy at each possible price during a given period, other things remaining constant. Because demand pertains to a specific period—a day, a week, a month—you should think of demand as the desired *rate of purchase per time period* at each possible price. Also, notice the emphasis on *willing* and *able*. You may be *able* to buy a rock concert ticket for $40 because you can afford one. However, you may not be *willing* to buy one if the performers do not interest you enough.

This relation between price and quantity demanded reflects an economic law. The **law of demand** says that quantity demanded varies inversely with price, other things constant. Thus, the higher the price, the smaller the quantity demanded. The lower the price, the greater the quantity demanded.



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The law of demand applies even to personal choices, such as whether or not to own a pet. For example, after New York City passed an anti-dog-litter law, owners had to follow their dogs around the city with scoopers and plastic bags. The law raised the cost, or price, of owning a dog. What do you think happened to the quantity of dogs demanded as a result of this law, and why?

Demand, Wants, and Needs

Consumer demand and consumer wants are not the same thing. Wants are unlimited. You may want a new Mercedes-Benz SL600 roadster convertible, but the $130,000 price tag is likely beyond your budget. (The quantity you demand at that price is zero.) Nor is demand the same as need. You may be outgrowing your winter coat and so need a new one. But if the price is $200, you may decide your old coat will do for now. If the price drops enough—say, to $100—then you become both willing and able to buy a new coat.

Substitution Effect

What explains the law of demand? Why, for example, is more of a product demanded when the price falls? The explanation begins with unlimited wants meeting scarce resources. Many goods and services are capable of satisfying your particular wants. For example, you can satisfy your hunger with pizza, tacos, burgers, chicken, sandwiches, salads, or hundreds of other items. Similarly, you can satisfy your desire for warmth in the winter with warmer clothing, a home-heating system, a trip to Hawaii, or in many other ways.

Some ways of satisfying your wants will be more appealing to you than others. A trip to Hawaii is more fun than warmer clothing. In a world without scarcity, everything would be free, so you would always choose the most attractive alternative. Scarcity, however, is a reality, and the degree of scarcity of one good relative to another helps determine each good's relative price.

Notice that the definition of *demand* includes the other-things-constant assumption. (A Latin phrase you may hear for "other things constant" is *ceteris paribus*.) Among the "other things" assumed to remain constant are the prices of other goods. For example, if the price of pizza declines while other prices remain constant, pizza becomes *relatively* cheaper. Consumers are more *willing* to buy pizza when its relative price falls. People tend to substitute pizza for other goods. This is called the *substitution effect of a price change*. On the other hand, an increase in the price of pizza, other things constant, causes consumers to substitute other goods for the now higher-priced pizza, thus reducing their quantity of pizza demanded.

Remember that *the change in the relative price—the price of one good relative to the prices of other goods—causes the substitution effect*. If all prices changed by the same percentage, there would be no change in relative prices and no substitution effect.

Income Effect

A fall in the price of a product increases the quantity demanded for a second reason. If you take home $36 a week from a Saturday job, your money income is $36 per week. Your *money income* is simply the number of dollars you receive per period, in this case $36 per week. Suppose you spend all your income on pizza, buying four a week at $9 each. What if the price drops to $6? At that price you can now afford six pizzas a week.

Your money income remains at $36 per week, but the decrease in the price has increased your *real income*—that is, your income measured in terms of how many goods and services it can buy. The price reduction, other things constant, increases the purchasing power of your income, thereby increasing your *ability* to buy pizza and, indirectly, other goods. The quantity of pizza you demand likely will increase because of this *income effect of a price change*. You may not increase your quantity demanded to six pizzas, but you can now afford six. If you purchase five pizzas a week when the price drops to $6, you would still have $6 left to buy other goods.

Thus, the income effect of a lower price increases your real income and thereby increases your *ability* to purchase pizza and other goods. Because of the income effect of a price decrease, other things constant, consumers typically increase their quantity demanded as the price decreases. Conversely, an increase in the price of pizza, other things constant, reduces real income, thereby reducing the ability to purchase pizza. Because of the income effect of a price increase, consumers typically reduce their quantity demanded as the price increases.

Diminishing Marginal Utility

After a long day of school, studies, and sports, you are starved, and so you visit a local pizzeria. That first slice tastes great and puts a serious dent in your hunger. The second is not quite as good as the first. A third is just fair. You don't even consider a fourth slice. The satisfaction you derive from an additional unit of a product is called your **marginal utility**. For example, the additional satisfaction you get from a second slice of pizza is your marginal utility of that slice.

The marginal utility you derive from each additional slice of pizza declines as your consumption increases. Your experience with pizza reflects the **law of diminishing marginal utility**. This law states that the more of a good an individual consumes per period, other things constant, the smaller the marginal utility of each additional unit consumed.

Diminishing marginal utility is a feature of all consumption. A second

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Why do consumers buy less of an item when its price rises?

marginal utility

The change in total utility resulting from a one-unit change in consumption of a good

law of diminishing marginal utility

The more of a good a person consumes per period, the smaller the increase in total utility from consuming one more unit, other things constant

NET Bookmark

For an example of pricing that uses the law of diminishing marginal utility, visit the Universal Studios Orlando web site. Access this web site through thomsonedu.com/school/econxtra. Click on "Park Tickets." Which offer or offers demonstrate the theme park's understanding of the law of diminishing marginal utility? Explain your answer.

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foot-long submarine sandwich at one meal would probably yield little or no marginal utility. You might still enjoy a second movie on Friday night, but a third one is probably too much to take.

Consumers make purchases to increase their satisfaction, or utility. In deciding what to buy, people make rough estimates about the marginal utility, or marginal benefit, they expect from the good or service. Based on this expected marginal benefit, people then decide how much they are willing and able to pay. Because of diminishing marginal utility, you would not be willing to pay as much for a second slice of pizza as for the first. This is why it takes a decrease in price for you to increase your quantity demanded.

Suppose a slice of pizza sells for $2. How many slices will you buy? You will increase consumption as long as the marginal benefit you expect from another slice exceeds the price. You stop buying more when your expected marginal benefit is less than the price. Simply put, you aren't willing to pay $2 for something that's worth less to you.

What if the price of pizza drops from $2 to $1 a slice? You buy more if the marginal benefit of another slice exceeds $1. *The law of diminishing marginal utility helps explain why people buy more when the price decreases.*

Diminishing marginal utility has wide applications. Restaurants depend on the law of diminishing marginal utility when they offer all-you-can-eat specials—and no doggie bags. The deal is all you can eat now, not all you can eat now and for as long as the doggie bag holds out.

After a long winter, that first warm day of spring is something special and is the cause of "spring fever." The fever is cured by many warm days like the first. By the time August rolls around, most people get much less marginal utility from yet another warm day.

How does the law of diminishing marginal utility apply to pizza consumption?



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For some goods, the drop in marginal utility after the first unit is dramatic. For example, a second copy of the same daily newspaper would likely provide you with no marginal utility. In fact, the design of newspaper vending machines relies on the fact that you will not want to take more than one.

More generally, the expressions "Been there, done that" and "Same old, same old" convey the idea that, for many activities, things start to get old after the first time. Your marginal utility, or marginal benefit, declines.

TeamWork

In small groups, brainstorm a list of products that most members of the group consume in a typical week. Then, working on your own, apply the law of diminishing marginal utility to each item. How many units of each item would you consume before the marginal benefit is less than the price of each unit? Compare your answers with those of other group members.

✓ CHECKPOINT

Explain the law of demand in your own words.

Demand Schedule and Demand Curve

Demand can be expressed as a *demand schedule* and as a *demand curve*. Panel (a) of Figure 4.1 shows a hypothetical demand schedule for pizza. When you describe demand, you must specify the units being measured and the period considered. In this example, the price is for a 12-inch regular pizza and the period is a week. The schedule lists possible prices, along with the quantity demanded at each price.

At a price of $15, for example, consumers demand 8 million pizzas per week. As you can see, the lower the price the greater the quantity demanded, other things constant. If the price drops as low as $3, consumers

The Graphing Workshop

Demand Schedule and Demand Curve for Pizza — **Figure 4.1**

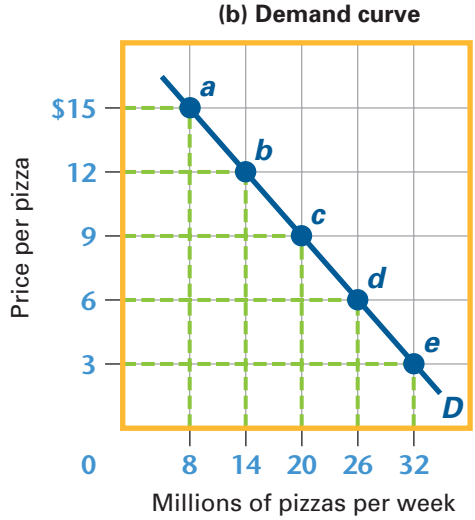
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Market demand curve D shows the quantity of pizza demanded, at various prices, by all consumers.

(a) Demand schedule

	Price per Pizza	Quantity Demanded per Week (millions)
a	$15	8
b	12	14
c	9	20
d	6	26
e	3	32

(b) Demand curve



demand 32 million per week. As the price falls, consumers substitute pizza for other goods. As the price falls, the real income of consumers increases, causing them to increase the quantity of pizza they demand. As pizza consumption increases, the marginal utility of pizza declines, so quantity demanded will increase only if the price falls.

The *demand schedule* in panel (a) of Figure 4.1 appears as a **demand curve** in panel (b), with price on the vertical axis and the quantity demanded per week on the horizontal axis. Each combination of price and quantity listed in the demand schedule becomes a point on the demand curve. Point a, for example, indicates that if the price is $15, consumers demand 8 million pizzas per week. These points connect to form the demand curve for pizza, labeled *D*. Note that some demand curves are straight lines and some are curved lines, but all of them are called demand *curves*.

demand curve
A curve or line showing the quantities of a particular good demanded at various prices during a given time period, other things constant

quantity demanded
The amount demanded at a particular price

The demand curve slopes downward, reflecting the *law of demand*—that is, price and quantity demanded are inversely, or negatively, related, other things constant. Several things are assumed to remain constant along the demand curve, including the prices of other goods. Thus, along the demand curve for pizza, the price of pizza changes *relative to the prices of other goods*. The demand curve shows the effect of a change in the *relative price* of pizza—that is, relative to other prices, which do not change.

Demand Versus Quantity Demanded

Be careful to distinguish between *demand* and *quantity demanded*. An individual point on the demand curve shows the **quantity demanded** at a particular price. For example, point *b* on the demand curve in Figure 4.1 indicates that 14 million pizzas are demanded when the price is $12. The *demand* for pizza is not a specific quantity, but the *entire relation* between price and quantity demanded. This relation is represented by the demand schedule or the demand curve. To recap, quantity de-

ETHICS IN ACTION

Inappropriate Response to Demand Can Have Tragic and Wasteful Effects

Official audits conducted less than a year after Hurricane Katrina found evidence that the federal government's attempt to aid the hurricane's victims produced incredible waste and avoidable suffering. Of the $10 billion spent, the Department of Homeland Security estimates that more than $1 billion was wasted. For example, The Federal Emergency Management Agency (FEMA) allocated $6.4 billion to place survivors in temporary trailers and mobile homes. Of the 141,000 trailers contracted for, only 71 percent were occupied. The mistakes in delivering health, power, and clean-up services only compounded the overall tragedy in many instances. Most damning in the face of the vast sums expended was the fact that in 2001 FEMA cited a New Orleans hurricane as a top disaster threat but never completed its response planning due to a lack of funds.

THINK CRITICALLY

Analyze this situation. Identify the lessons to be learned from the aftermath of Katrina. Could these lessons be developed from the governmental responses to previous hurricanes? Why or why not?

Sources: Spencer S. Hsu, "Waste in Katrina Response Is Cited," *Washington Post,* April 14, 2006.

manded refers to a specific amount of the good on the demand schedule or the demand curve, whereas demand refers to the entire demand schedule or demand curve.

Individual Demand and Market Demand

It is also useful to distinguish between **individual demand**, which is the demand of an individual consumer, and **market demand**, which sums the individual demands of all consumers in the market. *The market demand curve shows the total quantity demanded per period by all consumers at various prices.*

In most markets, there are many consumers, sometimes millions. To give you some feel for how individual demand curves sum to the market demand curve, assume that there are only three consumers in the market for pizza: Hector, Brianna, and Chris. Figure 4.2 shows how three individual demand curves are added together to get the market demand curve. When the price of a pizza is $8, for example, Hector demands two pizzas a week, Brianna demands one, and Chris demands none. The quantity demanded at a price of $8 is therefore three pizzas. At a price of $4, Hector demands three per week, Brianna two, and Chris one, for a quantity demanded of six. Panel (d) sums across each individual's demand curve to arrive at the market demand curve.

The market demand curve is simply the sum of the individual demand curves for all consumers in the market. Unless otherwise noted, this book will focus on market demand.

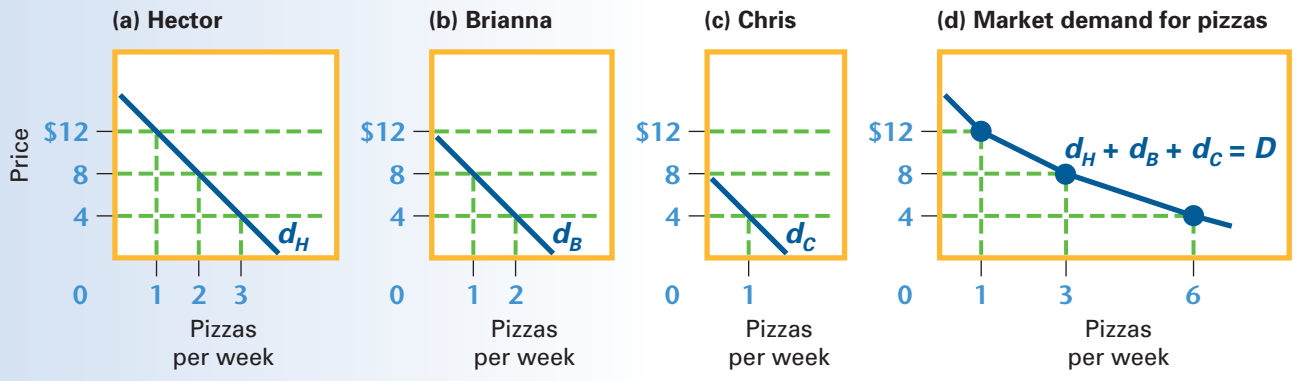
individual demand
The demand of an individual consumer

market demand
The sum of the individual demands of all consumers in the market

✓ CHECKPOINT

What do a demand schedule and demand curve show?

Market Demand for Pizzas — **Figure 4.2**



The individual demand curves of Hector, Brianna, and Chris are summed across to get the market demand curve. At a price of $8 per pizza, Hector demands 2 per week, Brianna demands 1, and Chris demands none. Quantity demanded at a price of $8 is 2 + 1 + 0 = 3 pizzas per week. At a lower price of $4, Hector demands 3, Brianna demands 2, and Chris demands 1. Quantity demanded at a price of $4 is 6 pizzas. The market demand curve D is the horizontal sum of individual demand curves d_H, d_B, and d_C.

Assessment 4.1

Xtra! Study tools
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Key Concepts

1. Many students would like to own an expensive sports car. Is this considered demand? Why or why not?
2. Why would demand for one fast-food restaurant's hamburgers grow if the price of the hamburgers at the fast-food restaurant across the street increased by $0.50?
3. How would the *income effect of a price change* be demonstrated by a $10 reduction in the price of tickets to a concert that resulted in a sell-out crowd?
4. Joe is willing to pay $1.50 for one taco after basketball practice but chooses not to purchase a second taco for the same price. How does this illustrate the *law of diminishing marginal utility*?
5. On Saturday nights, lots of people attend movies at the State Theater. Attendance depends at least in part on the price of tickets. At the current price of $8 per ticket, an average of 285 tickets are sold each Saturday night. What is the *demand* and what is the *quantity demanded* in this example?
6. What is the market demand per day for lunches in the cafeteria at your school?

Graphing Exercise

7. The owners of a local shoe store surveyed their customers to determine how many pairs of running shoes they would buy each month at different prices. The results of the survey appear in the demand schedule below. Use these data to construct a demand curve for running shoes. Explain how your graph demonstrates the law of diminishing marginal utility.

Demand for Running Shoes

Price	Quantity Demanded
$70	40
$60	50
$40	70
$30	80

Think Critically

8. **Marketing** Nancy is the sales manager of the shoe store. The owner has told her that she must set a price that allows the store to sell at least 50 pairs of running shoes next month. What price should she set? If another local store has a big sale and lowers its price for running shoes by 25 percent, will Nancy's employer reach the sales goal? Why or why not?
9. **History** When television sets first became available to consumers in the late 1940s, many people wanted one. Still, very few sets were sold at first. Explain why people's desire to own televisions did not result in a great demand for this product.

4.2 Elasticity of Demand

Objectives

- Compute the elasticity of demand, and explain its relevance.
- Discuss the factors that influence elasticity of demand.

Overview

Knowing the law of demand is useful, but a demand curve can offer even more information. It can show how sensitive quantity demanded is to a change in price. For example, a fast-food restaurant would like to know what will happen to its total revenue if it introduces a dollar menu. The law of demand indicates that a lower price increases quantity demanded, but by how much? A firm's success or failure depends on how much it knows about the demand for its product. This section measures how sensitive quantity demanded is to a change in price.

Key Terms

elasticity of demand

total revenue

In the News

Gas Prices Painful for Consumers

For many years economists have believed that demand for oil was inelastic. In the long run, however, this has proven to be incorrect. When oil prices rise, consumers trying to maintain their lifestyle are willing to absorb these increases in the short term. However, over the long term the price of oil eventually will affect quantity demanded. Oil analyst for Cambridge Energy Research Associates Jim Burkhard agrees that oil demand is immune to short-term spikes in price. He believes that it takes high prices for a sustained period before people begin to change their habits and thus their demand. A look back at the oil prices in the early 1980s shows gas prices, adjusted for inflation, at record levels. The result of sustained high prices through the decade caused consumers to reduce their driving and turn toward more fuel-efficient automobiles. As prices dropped, Americans increased their driving, doubling the miles they drove over the last 25 years. In the 1990s they once again began to buy less fuel-efficient light trucks and SUVs. Fifteen years later gas prices again were on the rise as American consumers competed with an increased worldwide demand for oil. The effect was a slight decrease in the quantity of gasoline demanded. One analyst suggested, "If prices go up another 10 percent, you would look for another 1 percent decline in demand, which would basically flat-line demand." If, however, gas prices remain high for an extended period, then drivers will make more dramatic lifestyle changes to reduce fuel consumption.

THINK ABOUT IT

Some economists believe that gas prices need to be higher to affect quantity demanded and reduce our dependency on oil. How much higher do you believe gas prices would have to be to affect quantity demanded?

Sources: Chip Cummins, Bhushan Bahre, and Peter A. McKay, "The Relentless Rise in Oil Prices; Demand Defies Cost Increases Amid Razor-thin Excess Capacity, Pain at the Gasoline Pump Mounts," *Wall Street Journal,* September 1, 2005; "Gas Demand Shows Signs of Weakness," *Cincinnati Post,* April 15, 2006.

Computing Elasticity of Demand

elasticity of demand
Measures how responsive quantity demanded is to a price change; the percentage change in quantity demanded divided by the percentage change in price

Figure 4.3 shows the downward sloping demand curve for pizza developed earlier. As you can see, if the price of a pizza falls from $12 to $9, the quantity demanded increases from 14 million to 20 million. Is such a response in quantity demanded a little or a lot? Demand elasticity measures consumer responsiveness to the price change. *Elasticity* is another word for *responsiveness*. Specifically, **elasticity of demand** measures the percentage change in quantity demanded divided by the percentage change in price, or

$$\text{Elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

What's the demand elasticity when the price of pizza falls from $12 to $9? The percentage increase in quantity demanded is the change in quantity demanded, 6 million, divided by 14 million. So, quantity demanded increases by 43 percent. The percentage change in price is the price change of $3 divided by $12, which is 25 percent.

Elasticity of demand is the percentage increase in quantity demanded, 43 percent, divided by the percentage decrease in price, 25 percent, which equals 1.7.

Elasticity Values

Does an elasticity of 1.7 indicate that consumers are sensitive to the price change? To offer some perspective, economists sort elasticity into three general categories. If the percentage change in quantity demanded exceeds the percentage change in price, the resulting elasticity exceeds 1.0. Such a demand is said to be *elastic,* meaning that a percentage change in price will result in a larger percentage change in the quantity demanded. Thus quantity demanded is considered relatively *responsive* to a change in price. The demand for pizza is elastic when the price falls from $12 to $9.

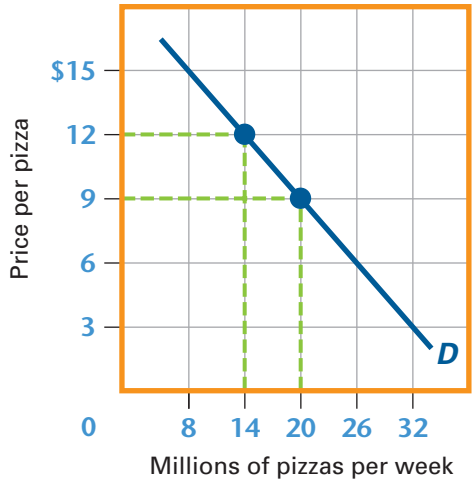
If the percentage change in quantity demanded just equals the percentage change in price, the resulting elasticity is 1.0, and this demand is called *unit elastic*. Finally, if the percentage change in quantity demanded is less than the percentage change in price, the resulting

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The Demand for Pizza — **Figure 4.3**

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If the price falls from $12 to $9, the quantity of pizza demanded increases from 14 million to 20 million per week.



elasticity lies between 0 and 1.0, and this demand is said to be *inelastic.*

In summary, *demand is elastic if greater than 1.0, unit elastic if equal to 1.0, and inelastic if between 0 and 1.0.* Also, the elasticity usually varies at different points on a demand curve. Demand is almost always more elastic at higher prices and less elastic at lower prices. This is particularly true when the demand curve is a straight line that slopes down from left to right.

Elasticity expresses a relationship between two amounts: the percentage change in price and the resulting percentage change in quantity demanded. Because the focus is on the percentage change, you need not be concerned with how output or price is measured. For example, suppose the good in question is apples. It makes no difference in the elasticity formula whether you measure apples in pounds, bushels, or even tons. All that matters is the percentage change in quantity demanded. Nor does it matter whether you measure price in U.S. dollars, Mexican pesos, Swiss francs, or Zambian kwacha. All that matters is the percentage change in price.

Elasticity and Total Revenue

Knowledge of elasticity is especially valuable to producers, because elasticity also indicates the effect a price change will have on how much consumers spend on this product. **Total revenue** is price multiplied by the quantity demanded at that price. What happens to total revenue when price decreases? A lower price means producers are paid less for each unit sold, which tends to decrease total revenue. However, according to the law of demand, a lower price increases quantity demanded, which tends to increase total revenue.

The impact of a lower price on total revenue can be estimated using elasticity of demand. When elasticity is greater than 1.0, or *elastic,* reducing the price by 5 percent will cause quantity demanded to increase by more than 5 percent. Thus the total revenue will increase. When elasticity is 1.0, or *unit elastic,* reducing the price by 5 percent will cause quantity demanded to increase by 5 percent. In this case total revenue will remain unchanged. When elasticity is less than 1.0, or *inelastic,* reducing the price by 5 percent will cause the quantity demanded to

Span the Globe

We Ate All the Big Fish

About 90 percent of big fish—such as giant tuna, swordfish, and Chilean sea bass—are gone from the world's oceans mainly due to overfishing to satisfy demand. In fact, at a UN summit meeting in 2002, 192 nations signed a declaration to try to restore such fish to healthy levels by 2015. Chilean sea bass is a good example of what happened to the big fish. Eight to ten years ago, very few people had heard of this fish. There wasn't much demand, and it was selling at $3 or $4 a pound. Then it became "the hot new fish." Suddenly, Chilean sea bass was featured on thousands of restaurant menus and sold in most supermarkets. Fishermen couldn't catch enough sea bass to keep up with the rising demand, though they tried. They were overfishing and not giving the fish enough time to replenish their populations. Today, even with the protection afforded by the nations signing the declaration, Chilean sea bass is so scarce that it sells for $18 to $20 a pound, and it is typically found only on the menu of upscale restaurants. At $20 per pound, the quantity demanded has decreased considerably. Unfortunately, the species also is nearly gone from our oceans.

THINK CRITICALLY

Suppose that at a price of $3 a pound, the quantity of Chilean sea bass demanded was 500,000 pounds. Once the price increases to $18 a pound, the quantity demanded is 100,000 pounds. At these prices and quantities, is the demand elastic, unit elastic, or inelastic?

Sources: "Take a Pass on Chilean Sea Bass," U.S. Newswire, April 21, 2006; Kenneth R. Weiss, *Los Angeles Times,* "Study Finds Industrial Fleets Have Stripped Oceans of Big Fish," *Las Vegas Review Journal,* May 15, 2003.

total revenue
Price multiplied by the quantity demanded at that price

increase, but by less than 5 percent. So, total revenue will fall.

Knowing a product's elasticity can help businesses with their pricing decisions. If demand is inelastic, producers will never willingly cut the price because doing so would reduce total revenue. The percentage increase in quantity demanded would be less than the percentage decrease in price. Why cut the price if selling more reduces total revenue?

✓ CHECKPOINT

What does the elasticity of demand measure?

Determinants of Demand Elasticity

So far you have explored the link between elasticity of demand and what happens to total revenue when the price changes. However, you have not yet considered why elasticity differs for different goods. Several characteristics influence the elasticity of demand.



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Do you think demand for sunglasses is elastic or inelastic? Identify the determinant of demand that supports your answer.

Availability of Substitutes

As noted earlier, your individual wants can be satisfied in a variety of ways. A rise in the price of pizza makes other foods relatively cheaper. If close substitutes are available, an increase in the price of pizza will prompt some consumers to switch to substitutes. But if nothing else satisfies like pizza, the quantity of pizza demanded will not decline as much. *The greater the availability of substitutes for a good and the more similar the substitutes are to the good in question, the greater that good's elasticity of demand.*

The number and similarity of substitutes depend on the definition of the good. *The more broadly a good is defined, the fewer substitutes there are and the less elastic the demand.* For example, everyone needs some sort of shoes, so the demand for shoes as a general category of product tends to be inelastic. If the price of all shoes goes up 20 percent, most people will still buy shoes. If you consider one particular brand of shoes, however, the demand will be more elastic because there are many other brands of shoes you could buy instead. For example, if only one shoe manufacturer raises its price by 20 percent, many shoe buyers will switch to other brands, which have not increased in price.

Certain goods—many prescription drugs, for instance—have no close substitutes. The demand for such goods tends to be less elastic than for goods with close substitutes, such as Bayer aspirin. Much advertising is aimed at establishing in the consumer's mind the uniqueness of a particular product—an effort to convince consumers "to accept no substitutes."

Share of Consumer's Budget Spent on the Good

Recall that a higher price reduces quantity demanded in part because a higher price reduces the real spending power of consumer income. A demand curve reflects both the consumer's *willingness* and *ability* to purchase a good at

alternative prices. Because spending on some goods represents a large share of the consumer's budget, a change in the price of such a good has a substantial impact on the amount consumers are *able* to purchase.

An increase in the price of housing, for example, reduces consumers' ability to purchase housing. The income effect of a higher price reduces the quantity demanded. In contrast, the income effect of an increase in the price of, say, paper towels is less significant because paper towels represent such a tiny share of any budget. *The more important the item is as a share of the consumer's budget, other things constant, the greater is the income effect of a change in price, so the more elastic is the demand for the item.* This explains why the quantity of housing demanded is more responsive to a given percentage change in price than is the quantity of paper towels demanded.

A Matter of Time

Consumers can substitute lower-priced goods for higher-priced goods, but finding substitutes usually takes time. For example, between 1973 and 1974, the OPEC oil cartel raised the price of oil sharply. The result was a 45-percent increase in the price of gasoline, but the quantity demanded decreased only 8 percent. As more time passed, however, people purchased smaller cars and made greater use of public transportation. Because the price of oil used to generate electricity and to heat homes increased as well, people bought more energy-efficient appliances and insulated their homes better. As a result, the change in the amount of oil demanded was greater over time as consumers adjusted to the price hike.

The longer the adjustment period, the greater the consumers' ability to



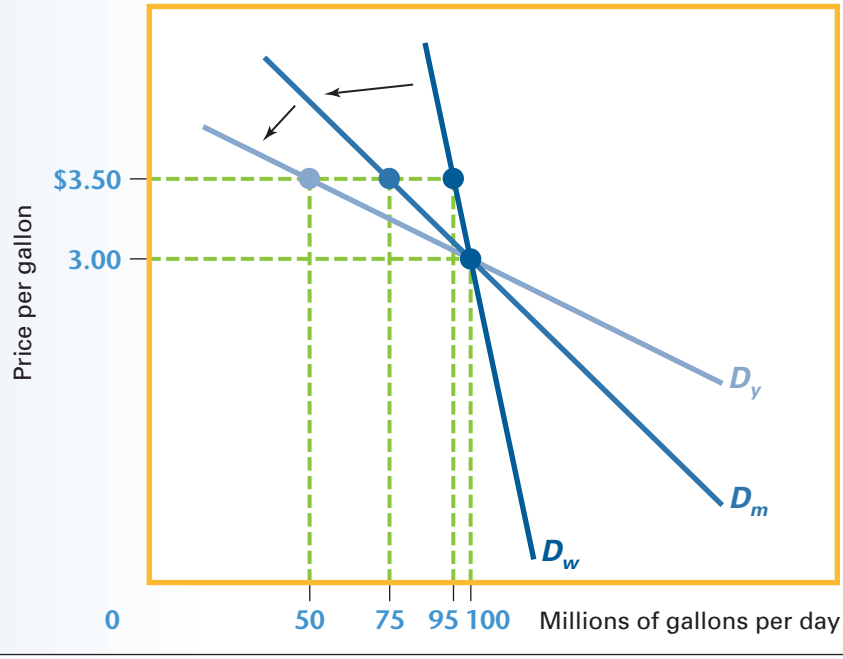
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Compare the income effect of an increase in the price of produce in a grocery store to the income effect of an increase in the price of a car. For which product is demand more price elastic?

Demand Becomes More Elastic Over Time — **Figure 4.4**

D_w is the demand curve one week after a price increase from $3.00 to $3.50 per gallon. Along this curve, quantity demanded per day falls from 100 million to 95 million gallons per day. One month after the price increase, quantity demanded has fallen to 75 million gallons per day along D_m. One year after the price increase, quantity demanded has fallen to 50 million gallons per day along D_y. At any given price, D_y is more elastic than D_m, which is more elastic than D_w.



replace relatively higher-priced products with lower-priced substitutes. Thus, the longer the period of adjustment, the more responsive the change in quantity demanded is to a given change in price.

Figure 4.4 demonstrates how demand for gasoline becomes more elastic over time. Given an initial price of $3.00 a gallon, let D_w be the demand curve one week after a price change; D_m, one month after; and D_y, one year after. Suppose the price increases to $3.50. The more time consumers have to respond to the price increase, the greater the reduction in quantity demanded. The demand curve D_w shows that one week after the price increase, the quantity demanded has not declined much—in this case, from 100 million to 95 million gallons per day. The demand curve D_m indicates a reduction to 75 million gallons per day after one month, and demand curve D_y shows a reduction to 50 million gallons per day after one year.

Some Elasticity Estimates

Let's look at some estimates of the elasticity of demand for particular goods and services. As noted earlier, the switch to lower-priced goods from a good whose price has just increased often takes time. Thus, when estimating elasticity, economists often distinguish between a period during which consumers have little time to adjust—call it the short run—and a period during which consumers can more fully adjust to a price change—call it the long run. Figure 4.5 provides some short-run and long-run elasticity estimates for selected products.

The elasticity of demand is greater in the long run because consumers have more time to adjust. For example, if the price of electricity rose today, consumers in the short run might cut back a bit on their use of electrical appliances, and those in homes with electric heat might lower the thermostat in winter. Over time, however, consumers would switch to more energy-efficient appliances and might convert from electric heat to oil or natural gas. So the demand for electricity is more elastic in the long run than in the short run, as noted in Figure 4.5. In fact, for each product listed, demand is more elastic in the long run than in the short run.

Selected Elasticities of Demand — **Figure 4.5**

When estimating elasticity, economists distinguish between the short run (a period during which consumers have little time to adjust to a price change) and the long run (a period during which consumers can more fully adjust to a price change). Demand is more elastic in the long run because consumers have more time to adjust.

Product	Short Run	Long Run
Electricity (residential)	0.1	1.9
Air travel	0.1	2.4
Medical care and hospitalization	0.3	0.9
Gasoline	0.4	1.5
Movies	0.9	3.7
Natural gas (residential)	1.4	2.1

✓CHECKPOINT

What are the determinants of demand elasticity?

An Application: Teenage Smoking

As the U.S. Surgeon General warns on each pack of cigarettes, smoking cigarettes can be hazardous to your health. Researchers estimate that smoking causes more than 400,000 deaths a year in the United States—nearly 10 times the fatalities from all traffic accidents.

One way to reduce smoking is to raise the price of cigarettes through higher cigarette taxes. Economists estimate the demand elasticity for cigarettes among teenage smokers to be about 1.3, so a 10 percent increase in the price of cigarettes would reduce smoking by 13 percent. Among adult smokers, the estimated elasticity is only 0.4, or only about one-third that of teenagers.

Why are teenagers more sensitive to price changes than adults? First, recall that one of the factors affecting the elasticity of demand is the importance of the item in the consumer's budget. The share of income that a teenage smoker spends on cigarettes usually exceeds the share for adult smokers. Second, peer pressure is more influential in a young person's decision to smoke than in an adult's decision to continue smoking. (If anything, adults face peer pressure *not* to smoke.) The effects of a higher price get multiplied among young smokers because a higher price reduces smoking by peers. With fewer peers smoking, there is less pressure to smoke. And third, because smoking is addictive, young people who are not yet hooked are more sensitive to price increases than are adult smokers, who are already hooked.

NETBookmark

For more information about the dangers of smoking, The Campaign for Tobacco Free Kids maintains a web site with a page devoted to articles on the economics of tobacco policy. Access this site through thomsonedu.com/school/econxtra. Click on "Tobacco Facts." According to this article, is the total number of smokers in the world increasing or decreasing? The article states that between 80,000 and 100,000 young people around the world become addicted to tobacco every day. If this trend continues, how many children alive today will die from tobacco-related disease?

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Assessment 4.2

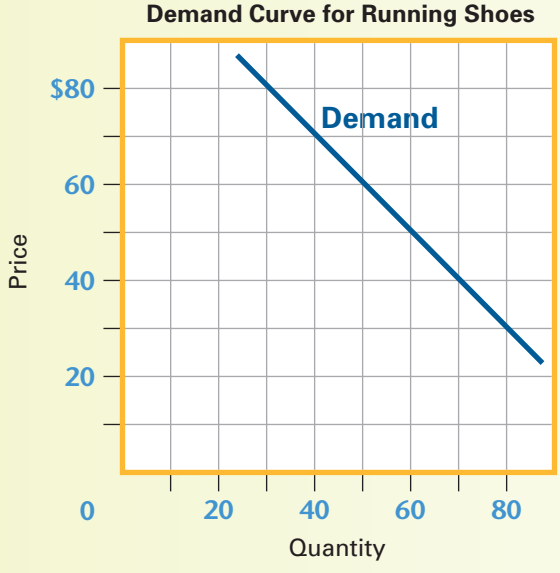
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Key Concepts

1. What would a shoe store need to do to calculate the elasticity of demand for the running shoes it sells if it decides to raise its prices by 10 percent?
2. If the shoe store finds a demand elasticity for its running shoes of 1.3, is this elastic, unit elastic, or inelastic demand?
3. If the shoe store increases its price for running shoes by 10 percent, what would happen to the store's total revenue from these products?
4. Why should you expect the demand for a particular brand of cake mix to be more elastic than the demand for cake mix in general?

Graphing Exercise

5. Consider this graph for running shoes below. Note that if the store's manager increases the price from $60 to $70 (16.7%), the quantity demanded would fall from 50 to 40 pairs per month (20.0%). What is the elasticity of demand? Is demand elastic, unit elastic, or inelastic? Will the store's total revenue increase, decrease, or remain unchanged as a result of the price increase?



Think Critically

6. **Sociology** The elasticity of demand for some products is affected by the personal values of possible customers. Consider people who practice the Hindu faith. They believe it is wrong to eat meat. In Hindu communities, the elasticity of demand for meat products is 0.0, or completely inelastic—consumers won't buy meat no matter what happens to its price. Describe several other situations where other factors are more important to the buying decision than price.
7. **Entrepreneurship** If there are 10 bakeries in a small city, why might the elasticity of demand for the products any one of them supplies be high? Why might this small town not be a good location for you to open another bakery?

movers & shakers

Julie Azuma *President, Different Roads to Learning*

Finding appropriate toys for her autistic daughter was always a challenge for Julie Azuma. In 1995 she met that challenge by starting a business selling educational toys for learning disabled children via the Internet. Her first obstacle—she was not computer literate. With determination and courage, Azuma met the obstacle head-on, and within months her web site was established. Her company, Different Roads to Learning, received its first orders by December of that year.

Selling product via the Internet meant Azuma didn't need a storefront. This was something she originally wanted but quickly learned she couldn't afford. Selling via the Internet had its advantages, however. Azuma was able to reach potential customers throughout the world, and today 10 percent of her customers are from Canada, the United Kingdom, and Australia.

From the start, Different Roads to Learning's web site included a complete line of products. "But as soon as the site went up, we received requests for a printed catalog, too." Azuma responded by printing 3,000 catalogs for customers who requested them. It was a good decision. Although catalog requests typically came from parents, "we found that parents were bringing the catalog to their child's school, asking their school districts to purchase many of the items." That resulted in larger orders for more products. Today Azuma prints more than 100,000 catalogs a year.



SUPPLIED PHOTO

Azuma prides herself on serving her customers the best she can. She's quick to advise parents on what materials may be appropriate for their child, as well as what toys may not be a good fit. "We try to ship all of our orders on the day we receive them if at all possible," she explains. "Parents of autistic children need to have their materials as soon as possible."

In response to the increased demand for advice on helping an autistic child to learn, in 1999 Azuma started a publishing company, DRL Books, Inc. Her first book, a comprehensive handbook for parents of autistic children, sold more than she projected. She began to look for more books that met her high standards of assisting parents and teachers. By 2002, the company had published eight books with sales of $175,000. While the first books she published were extremely popular, not every book has met Azuma's expectations. "I thought that all of our books would have the same appeal, but there are a lot of autism books available now." The company now sells 250 products, including books.

In 1996, Different Roads to Learning's first year in business, gross sales were $8,000. By 2000, sales exceeded expenses and the company became profitable. By 2004, DRL offered 250 items to a customer base of 22,000. Sales totaled $1.7 million. In addition to increasing sales, Azuma also has learned how to make her business more profitable by using an outside source to fulfill and ship orders. Azuma's efforts to help parents of autistic children have earned her New York State's prestigious Martin Luther King Award for community service. Her newest business venture is Mind & Memory Store, a line of products she sells for people with Alzheimer's, launched in 2005.

SOURCE READING

Although the first books published by DRL Books, Inc. exceeded sales goals, the books she published later were not as popular. Azuma said, "I thought that all of our books would have the same appeal, but there are a lot of autism books available now." What influenced the elasticity of demand for the company's later books?

Sources: Interview via e-mail and www.awib.org.

ENTREPRENEURS IN ACTION

If Azuma's first book sold for $22 and 875 copies were sold, what was her total revenue? What would likely happen to Azuma's total revenue if she decreased the price of the book to $18? If demand is inelastic, would Azuma's decision to lower the price be a good one? Why or why not?

4.3 Changes in Demand

Objectives

- Identify the determinants of demand, and explain how a change in each will affect the demand curve.
- Distinguish between the money price of a good and the time price of a good.

Overview

So far the discussion of demand has been limited to the relationship between price and quantity demanded. That is, the focus has been on movement along a particular demand curve. A demand curve isolates the relation between the price of a good and the quantity demanded when other factors that could affect demand remain unchanged. What are these other determinants of demand, and how would changes in them affect demand?

Key Terms

tastes

movement along a given demand curve

shift of a demand curve

In the News

Technology Changes TV Viewing Habits

American television viewers currently are turning more and more toward their cell phones, iPods, and the Internet for their viewing pleasure. As the nation becomes more mobile yet increasingly connected to the digital world, the demand for the news or their favorite television shows is changing. More and more viewers are expecting to watch their favorite shows at their convenience rather than at the time set by the networks. This attitude began with the VCR and evolved to TiVo. However, recent technological innovations have allowed viewers to watch not only when they want but also where they want. As cable television and satellite systems began pushing digital service, they gained the ability to offer "on demand" programming. HBO, the first network to add "on demand" programming, paved the way for others. While some of the programming is offered free (as an incentive for people to upgrade their technology), for other programming, viewers must pay a fee. ABC became the first major network to offer prime-time programming—*Lost* and *Desperate Housewives*—free on the Internet. The changes are an effort to capture a larger and younger audience. Unlike their parents who say, "It's 9:00 o'clock, what's on?"—this generation is more likely to say, "Hey, I've got a little time now. What should I watch?"

THINK ABOUT IT

How might technological changes affect determinants of demand for television shows?

Sources: Stephen Kiehl and David Zurawik, "ABC's Bold Experiment: Free TV on the Internet," *Baltimore Sun,* March 11, 2006; Gary Levin, "On Demand in Demand," *USA Today,* July 2, 2002; Johnnie L. Roberts, "The Future of Evening News," *Newsweek,* March 17, 2006.

Changes That Can Shift the Demand Curve

A demand curve isolates the relation between price and quantity demanded when other factors that could affect demand are assumed constant. These other factors, often referred to as *determinants of demand,* include

1. Consumer income
2. The prices of related goods
3. The number and composition of consumers
4. Consumer expectations
5. Consumer tastes

How does a change in each affect demand?

Changes in Consumer Income

Figure 4.6 shows the market demand curve *D* for pizza. Consumers' money income is assumed to remain constant along a demand curve. Suppose money income increases. Some consumers will then be willing and able to buy more pizza at each price, so market demand increases. The demand curve shifts to the right from *D* to *D′*. For example, at a price of $12, the amount of pizza demanded increases from 14 million to 20 million per week, as indicated by the movement from point *b* on demand curve *D* to point *f* on demand curve *D′*. In short, *an increase in demand—that is, a rightward shift of the demand curve—means that consumers are more willing and able to buy pizza at each price.*

NORMAL GOODS

Goods are classified into two broad categories depending on how the demand for the good responds to changes in money income. The demand for a *normal good* increases as money income increases. Because pizza is a normal good, the demand curve for pizza shifts rightward when consumer income increases. Most goods are normal goods.

INFERIOR GOODS

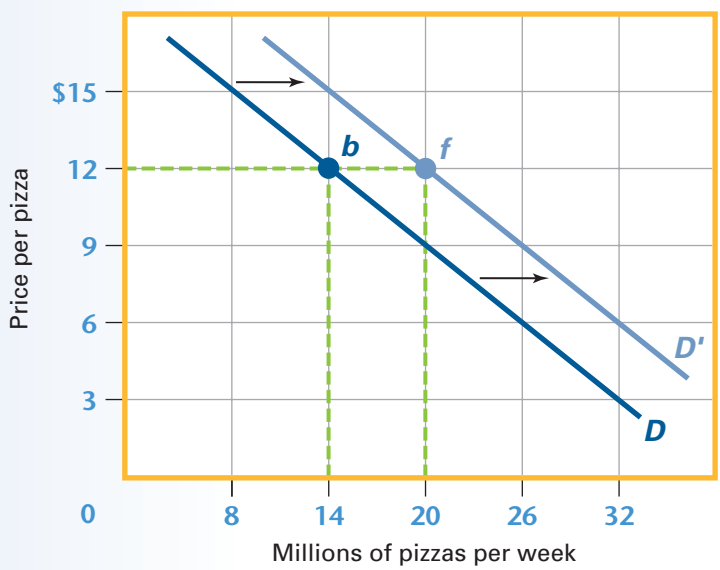
In contrast, the demand for an *inferior good* actually decreases as money income increases. Examples of inferior

The Graphing Workshop

An Increase in the Market Demand for Pizza — **Figure 4.6**

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An increase in the demand for pizza is shown by a rightward shift of the demand curve. After the increase in demand, the quantity of pizza demanded increases at each price level. For example, the quantity demanded per week at a price of $12 increases from 14 million (point b) to 20 million (point f).



goods include bologna sandwiches, used furniture, used clothing, trips to the Laundromat, and bus rides. As money income increases, consumers switch from consuming these inferior goods to consuming normal goods—like roast beef sandwiches, new furniture, new clothing, a washer and dryer, and automobile or plane rides.

Changes in the Prices of Related Goods

As you've seen, the prices of other goods are assumed to remain constant along a given demand curve. Now you are ready to consider the impact of changes in the prices of other goods.

SUBSTITUTES

Products that can be used in place of each other are called substitutes. Consumers choose among substitutes partly on the basis of relative prices. For example, pizza and tacos are substitutes, though not perfect ones. An increase in the price of tacos prompts some consumers to substitute pizza for the now-pricier tacos. This increase in the demand for pizza is shown in Figure 4.6 by a rightward shift of the demand curve. Two goods are *substitutes* if an increase in the price of one shifts the demand curve for the other rightward and, conversely, if a decrease in the price of one shifts the demand curve for the other leftward.

On the other hand, a decrease in the price of tacos would reduce the demand for pizza, as shown in Figure 4.7, where the demand curve for pizza shifts to the left from D to D''. As a result, consumers are less willing and able to buy pizza at every price. For example, at a price of $12, the amount demanded decreases from 14 million to 10 million per week, as indicated by the movement from point b on demand curve D to point j on demand curve D''.

COMPLEMENTS

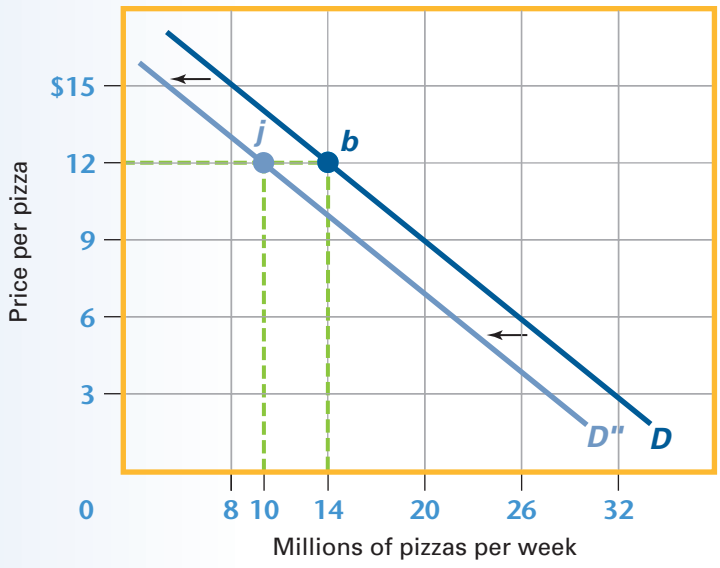
Certain goods are often used in combination. Pizza and soft drinks, milk and cookies, computer hardware and software, and airline tickets and rental cars are complements. When two goods are complements, a decrease in the price of one increases the demand for the other. For example, a decrease in the price of soft drinks shifts the demand curve for pizza rightward.

The Graphing Workshop

A Decrease in the Market Demand for Pizza — **Figure 4.7**

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A decrease in the demand for pizza is shown by a leftward shift of the demand curve. After the decrease in demand, the quantity of pizza demanded decreases at each price level. For example, quantity demanded per week at a price of $12 decreases from 14 million (point b) to 10 million (point j).



Changes in the Size or Composition of the Population

As mentioned earlier, the market demand curve is the sum of the individual demand curves of all consumers in the market. If the population grows, the number of consumers in the market increases. For example, if the population grows, the demand curve for pizza will shift rightward. Even if the total population remains unchanged, demand could shift as a result of a change in the composition of the population. For example, an increase in the teenage population could shift pizza demand rightward. A baby boom would increase the demand for car safety seats and baby food.

Changes in Consumer Expectations

Another factor assumed to be constant along a given demand curve is consumer expectations about factors that influence demand, such as the future income and the future price of the good. A change in consumer expectations can shift the demand curve. For example, your demand for some goods may increase after you land a summer job, even before summer arrives.



Changes in price expectations also can shift demand. For example, if you expect pizza prices to jump next week, you may buy an extra one today for the freezer, thereby shifting the demand for pizza rightward. Or if consumers come to believe that home prices will climb next year, some will increase their demand for housing this year, shifting the demand for housing rightward.

Changes in Consumer Tastes

Do you like anchovies on a pizza? How about sauerkraut on a hot dog? Is music to your ears more likely to be rock, country, heavy metal, hip-hop, reggae,

e-conomics

When the attendees at the 2003 International Consumer Electronics Show (CES) in Las Vegas were greeted by banners flying the headline "Technology Is a Girl's Best Friend," notice was served that things would have to change. Women were becoming quite comfortable with technology. In fact two years later, women accounted for more than half of the $122 billion consumer electronics market. Consumer electronics companies got the message. Product focus groups that were once all male now are half female, and the new products have changed accordingly. In addition, the companies realize that the upcoming generation of women is going to be even more comfortable with their electronic products.

THINK CRITICALLY

Identify the determinant of demand this situation illustrates. Explain your answer.

Sources: "Meet Jane Geek," Business Week Online, November 26, 2005; Chris Jones, "Electronics Experts Tout Power of Women Consumers," *Las Vegas Review Journal/ Gaming Wire,* January 11, 2003.

jazz, new age, or classical? Choices in food, music, clothing, reading, movies, TV shows—indeed, all consumer choices—are influenced by consumer tastes.

tastes
Consumer preferences; likes and dislikes in consumption; assumed to be constant along a given demand curve

movement along a given demand curve
Change in quantity demanded resulting from a change in the price of the good, other things constant

shift of a demand curve
Increase or decrease in demand resulting from a change in one of the determinants of demand other than the price of the good

Tastes are your likes and dislikes as a consumer. Tastes are assumed to remain constant along a given demand curve. What determines your tastes? Your desires to eat when hungry and to drink when thirsty are largely biological. So is your preference for shelter, comfort, rest, personal safety, and a pleasant environment. Your family background shapes many of your tastes. Other influences include the surrounding culture and peer influence.

Generally, economists claim no special expertise in understanding how tastes develop. Economists recognize, however, that tastes are important in shaping demand. For example, although pizza is a popular food, some people just don't like it and others might be allergic to the cheese, tomatoes, or the gluten in the pizza dough. Thus, some people like pizza and others don't. A change in the tastes for a particular good would shift the demand curve. For example, a discovery that the combination of cheese and tomato sauce on pizza promotes overall health could affect consumer tastes, shifting the demand curve for pizza to the right.

But a change in tastes is difficult to isolate from other economic changes. That's why economists attribute a change in demand to a change in tastes only after ruling out other possible explanations.

Movement Along a Demand Curve Versus a Shift of the Curve

You should remember the distinction between a movement along a demand curve and a shift of a demand curve. A change in price, other things constant, causes a **movement along a demand curve**, changing the quantity demanded. A change in one of the determinants of demand other than price causes a **shift of a demand curve**, changing demand.

✓ CHECKPOINT

What are the five determinants of demand, and how do changes in each shift the demand curve?

Extension of Demand Analysis: The Role of Time in Demand

Because consumption does not occur instantaneously, time plays an important role in demand analysis. The cost of consumption has two components: the *money price* of the good and the *time price* of the good. Goods are demanded because of the benefits they provide. Thus, you are willing to pay more for medicine that works faster. Similarly, it is not the microwave oven, personal computer, or airline trip that you value but the services they provide. Other things constant, the good that provides the same benefit in less time is preferred. That's also why you are willing to pay more for ready-to-eat foods that you don't need to prepare yourself.

Your willingness to pay more for time-saving goods and services depends on the opportunity cost of your time. Differences in the value of time among consumers help explain differences in the consumption patterns observed in the economy. For example, a retired couple has more leisure time than a working couple. The retired couple may clip

NET Bookmark

To learn more about the economics of consumption, read Jane Katz's "The Joy of Consumption" in the Federal Reserve Bank of Boston's *Regional Review*. Access this article through thomsonedu.com/school/econxtra. What evidence does Katz cite about how the rising value of time has affected consumer spending patterns?

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coupons and the search the newspapers for bargains, sometimes going from store to store for particular grocery items on sale that week. The working couple usually will ignore the coupons and the sales and will eat out more often and purchase more at convenience stores, where they are willing to pay extra for the convenience. The retired couple will be more inclined to drive across country on vacation, whereas the working couple will fly to a vacation destination.

Differences in the opportunity cost of time among consumers shape consumption patterns and add another dimension to demand analysis.

✓ CHECKPOINT

What's the difference between the money price of a good and its time price?

Sharpen Your Skills



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Draw Conclusions

Demand for many products can be affected by a single important event. In September 2002, for example, Hurricane Isadore plowed into the southern coast of Louisiana, leaving widespread destruction in its wake. Thousands of homes were destroyed along with many businesses, roads, and public buildings.

Consider how this disaster must have changed people's demand for goods and services in Louisiana. Divide the following businesses into two lists: one made up of firms that would have had increased demand for their products because of Isadore, the other of businesses that would have experienced reduced demand. Explain your placement of each business.

- building contractors
- swimming pool installers
- luxury hotels
- apartment buildings
- lumber yards
- amusement parks

Apply Your Skill

Imagine that the United States mobilizes its military forces to fight a war in a foreign country. It calls up 250,000 reserve soldiers and increases its purchases of military equipment. Many factories operate 24 hours a day to keep up with government orders. Describe several ways in which this would shift demand for products in the U.S. economy.

Assessment 4.3

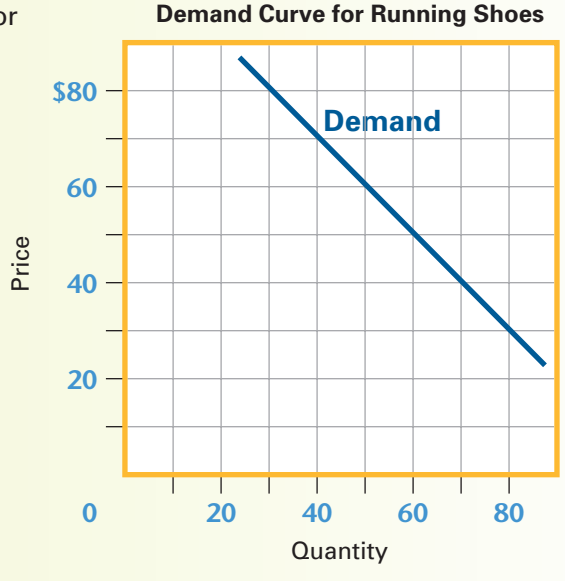
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Key Concepts

1. What would happen to the demand curve for bus tickets if the price of gasoline increased to $5 per gallon? Which of the determinants of demand would this affect?
2. What would happen to the demand curve for a particular brand of shampoo if a famous movie actress with beautiful hair announces that it is the best shampoo she has ever used? Which of the determinants of demand would this affect?
3. What would happen to the demand curve for towels today if a large store announces that it will have a 50 percent off sale on towels next week? Which of the determinants of demand would this affect?
4. If the price of hot dogs increases by $0.50 per pound when the prices of substitute products remain the same, will the demand curve for hot dogs shift to the right, shift to the left, or stay in the same location? Explain your answer.
5. Why might the demand for "Quick Oats" that cook in 2.5 minutes be greater than the demand for regular oats that take 10 minutes?

Graphing Exercise

6. To the right is the demand curve for running shoes at a local retailer. Make a copy of the demand curve. Draw the shift of the demand curve on your copy that would result from each of the following events. Label each shift of the demand curve.
   a. Many people decide to buy new running shoes to run in a local marathon.
   b. Three months of almost uninterrupted rain keeps most people inside.
   c. Income tax rates for most workers are increased by 10 percent.
   d. A new housing development is built near the store.



Think Critically

7. **History** When the stock market crashed in 1929, demand for normal goods fell. Explain why this happened and how it contributed to the Great Depression of the 1930s.
8. **Health** For many years, cigarette manufacturers have been required to place health warnings on their products. What are these warnings intended to do to smokers' demand curves for cigarettes?

CONNECT TO HISTORY



The Industrial Revolution in England: The Demand for Cotton

The Industrial Revolution began with England's textile industry in the mid 1700s. Cotton had been around since the 1630s, when it was introduced to Europe from India. Although popular, cotton was considered a threat to the British wool, linen, and silk industries. To protect these industries, Parliament restricted cotton imports. The restrictions lasted until 1736, when Great Britain changed the laws allowing the manufacture and sale of cotton. This marked the beginning of cotton manufacturing in the West.

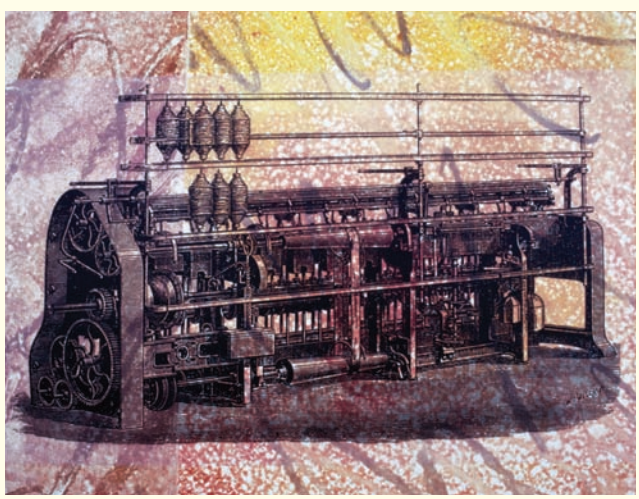
The two basic stages of manufacturing cotton textiles were spinning and weaving. Typically these tasks were done in the home in what was called a cottage industry, as mentioned in Chapter 3. Entrepreneurs supplied raw materials, such as raw cotton or thread, to a household. Then members of the household would produce thread or cloth for the entrepreneur. Of the two tasks, spinning was simpler, and the spinners produced more thread than the weavers could weave. John Kay's 1733 invention, the flying shuttle, changed much of that. It allowed one weaver rather than two to operate a loom and produce more cloth. The demand for thread began to rise.

To satisfy this demand, James Hargreaves invented the spinning jenny in the 1760s. With his invention, a single worker could spin multiple threads, but it produced a relatively weak product. Richard Arkwright invented the water frame in 1769. This innovation produced a stronger, coarser thread. Finally, Samuel Crompton's 1779 spinning mule produced a strong yet fine thread. Once again spinners were producing more than weavers could use.

Edmund Cartwright's power loom, patented in 1785, enabled the British cotton textile production to explode. In 1796, the country manufactured 21 million yards of cotton cloth. That increased to 347 million yards by 1830. The demand for cotton cloth proved to be highly elastic. The technological advances, coupled with cotton from the United States, caused the price of cotton cloth to drop. By the early part of the nineteenth century, Britain was even able to sell cotton cloth in India. With this increased technology, the demand for raw cotton increased. Great Britain found in the United States a willing and able supplier.

THINK CRITICALLY

Indicate how the demand curve for cotton would shift with each of the Industrial Revolution's technological inventions. Use D_1 for the cottage industry demand, D_2 for John Kay's flying shuttle, D_3 for Samuel Crompton's spinning mule, and D_4 for Edmund Cartwright's power loom.



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A Cotton Mill Loom

4 Chapter Assessment

Summary

4.1 The Demand Curve

a *Demand* indicates how much of a product consumers are willing and able to buy at each possible price during a given period, other things remaining constant. The *law of demand* states that the higher the price, the smaller the quantity demanded, and vice versa.

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b The *quantity demanded* increases as the price falls because of the *substitution effect*, the *income effect*, and *diminishing marginal utility*. *The law of diminishing marginal utility* states that each additional unit of a product consumed normally provides less additional utility than the previous unit.

c Demand for a product can be expressed as a *demand schedule* or as a graph called a *demand curve*. Most demand curves slope down from left to right, indicating an inverse relationship between price and quantity demanded. This means that as the price declines, the quantity demanded increases.

4.2 Elasticity of Demand

a *Elasticity of demand* measures the responsiveness of quantity demanded to a change in price. Elasticity is calculated by dividing the percentage change in the quantity demanded by the percentage change in price.

b Demand may be *elastic, unit elastic*, or *inelastic*. Elastic demand has a value greater than 1.0. When demand is elastic, a percentage change in price will result in a larger percentage change in the quantity demanded. Unit elastic demand has a value of 1.0. When demand is unit elastic, a percentage change in price will result in an identical percentage change in the quantity demanded. Inelastic demand has a value less than 1.0. When demand is inelastic, a percentage change in price will result in a smaller percentage change in the quantity demanded.

c Elasticity of demand can be used to predict what will happen to a firm's *total revenue* when the price changes. When demand is elastic, a price increase will reduce total revenue. When demand is unit elastic, a price increase will not change total revenue. When demand is inelastic, a price increase will increase total revenue.

d A good with many substitutes or a good that represents a large proportion of the consumer's budget tends to have elastic demand. A good with few substitutes or that represents a small proportion of the consumer's budget, tends to have inelastic demand. As a general rule, demand will be more elastic the more time consumers have to adjust to a price change.

4.3 Changes in Demand

a There are five general categories of events that can cause a demand curve to shift. These are: (1) a change in consumer income, (2) a change in the price of related goods, (3) a change in the number or composition of consumers, (4) a change in consumer expectations, and (5) a change in consumer tastes.

b *Substitute* products may be used somewhat interchangeably. An increase in the price of one will cause demand for the other to increase. *Complementary* products are normally used together. An increase in the price of one will cause the demand for the other to decrease.

c The demand for products can be influenced by time. Customers who must wait in line to buy a product may choose not to wait. Consumers are usually willing to pay more for goods that offer the same benefit but in less time.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer.

_____ **1.** The sum of the individual demand of all consumers in the market

_____ **2.** A graph that shows the quantities of a particular good that will be demanded at various prices during a given time period, other things constant

_____ **3.** The demand of a single consumer in the market

_____ **4.** The amount of a product that is demanded at a particular price

_____ **5.** An increase or decrease in demand that results from a change in a determinant of demand

_____ **6.** A change in the quantity demanded that results from a change in the product's price

_____ **7.** The change in total utility resulting from a one-unit increase in consumption of a particular product

_____ **8.** The more of a good a person consumes per period, the smaller the increase in total utility from consuming one more unit, other things constant

_____ **9.** The quantity of a good demanded per period relates inversely to its price, other things constant

_____**10.** Price multiplied by the quantity demanded at that price

_____**11.** A relation showing the quantities of a good that consumers are willing and able to buy at various prices per period, other things constant

_____**12.** Measures how responsive quantity demanded is to a price change

_____**13.** Consumer preferences; assumed to be constant along a given demand curve

a. demand
b. demand curve
c. elasticity of demand
d. individual demand
e. law of demand
f. law of diminishing marginal utility
g. marginal utility
h. market demand
i. movement along a given demand curve
j. quantity demanded
k. shift of a demand curve
l. tastes
m. total revenue

Review Economic Concepts

14. True or False A change in the price of a product will not cause that product's *demand curve* to shift.

15. The __?__ is demonstrated by the fact that people will buy more hot dogs and hamburgers when the price of pizza increases.

16. *Elasticity* expresses a relationship between the percentage change in __?__ and the resulting percentage change in __?__.

17. Which of the following is false about demand curves?

a. They normally slope down from left to right.

b. They show the relationship between price and the quantity demanded.

c. They can be used to calculate a product's elasticity of demand.

d. They show how much profit is earned by businesses that sell the product.

18. **True or False** *Quantity demanded* at a particular price is represented by an individual point on a demand curve.

19. Which of the following is the correct formula for the *elasticity of demand*?
    a. $\frac{\text{change in the price of the product}}{\text{change in the quantity demanded}}$
    b. $\frac{\text{change in the quantity demanded}}{\text{change in the price of the product}}$
    c. $\frac{\%\text{ change in the price of the product}}{\%\text{ change in the quantity demanded}}$
    d. $\frac{\%\text{ change in the quantity demanded}}{\%\text{ change in the price of the product}}$

20. **True or False** A firm's *total revenue* will increase if it raises the price of a product that has an elasticity of demand equal to 0.7.

21. If the *total revenue* from selling a product declines when the product's price is increased, the demand for that product is __?__.

22. **True or False** A business is more likely to increase the price of its products if the demand for these products is elastic than if the demand is inelastic.

23. Which of the following does *not* influence the *elasticity of demand*?
    a. availability of substitute products
    b. availability of complementary products
    c. the share of the consumer's budget spent on the good
    d. the time frame of the purchase

24. **True or False** *Market demand* is the demand of an individual consumer.

25. Which of these products is most likely to have elastic demand?
    a. a cable television service
    b. a particular brand of hand soap
    c. ground black pepper
    d. taxi service in a large city

26. **True or False** When consumers earn more income, their demand for normal products will increase.

27. Which of the following is *not* a determinant of demand?
    a. consumer income
    b. prices of related goods
    c. consumer expectations and tastes
    d. all of the above would affect demand

28. **True or False** Demand for a *normal good* decreases as money income increases.

29. One purpose of advertising is to
    a. shift a product's demand curve to the right.
    b. shift a product's demand curve to the left.
    c. make a product's demand more elastic.
    d. help consumers identify the product's substitutes

30. Your __?__ income is your income measured in terms of how many goods and services it can buy.

31. Which of the following pairs of products are examples of *complementary goods*?
    a. blank sheets of paper and copy machines
    b. dining room tables and floor lamps
    c. heating oil and natural gas
    d. warm coats and trips to Florida
    e. peanut butter and jelly
    f. private and public transportation
    g. Coke and Pepsi
    h. alarm clocks and automobiles
    i. golf clubs and golf balls

32. A change in a __?__ will change demand for a product when there is no change in price.

33. **True or False** If a person's income temporarily falls to zero because of unemployment, he or she will still demand some products.

Apply Economic Concepts

34. Graphing Shifts of Demand Curves The owner of Rita's Tacos bought ads in a local newspaper. As a result, the demand for her tacos increased as demonstrated in the demand schedule below. Draw a graph of her demand as it was before the ads were printed. On the same graph, draw the new demand curve for tacos. Explain why many businesses advertise their products.

Old and New Demand Schedule for Rita's Tacos

Price Per Taco	Old Quantity Demanded	New Quantity Demanded
$2.00	25	75
$1.75	50	100
$1.50	75	125
$1.25	100	150
$1.00	125	175
$0.75	150	200

35. Price Elasticity of Demand If Rita changed the price of her tacos from $1.75 to $1.50 each, her sales would grow from 100 to 125 per day. Calculate the percentage change in price and in quantity demanded and then the price elasticity of demand. Is this demand elastic, unit elastic, or inelastic?

36. Total Revenue Using the new demand schedule, calculate the total revenue Rita received from the tacos when she sold them at a price of $1.75 and now that she sells them at a price of $1.50. Can you be sure that her business is more profitable at the lower price? Explain why or why not.

37. Market Demand Working in small groups, determine your group's market demand for gasoline. Make up a chart listing a variety of prices per gallon of gasoline, such as $2.00, $2.25, $2.50, $2.75, $3.00, $3.25. Each group member should determine how many gallons *per week* they would purchase at each possible price. Then do the following:

a. Plot each group member's demand curve. Check to see whether each person's responses are consistent with the law of demand.

b. Derive the "market" demand curve by adding the quantities demanded by all students at each possible price.

c. What do you think will happen to that market demand curve after your class graduates and your incomes rise?



38. Read the "Real Per-Capita Disposable Income" article in the **EconDataOnline** section at thomsonedu.com/school/econxtra. What happens to quantity of goods demanded when real per capita disposable income increases?

5 Supply

5.1 The Supply Curve

5.2 Shifts of the Supply Curve

5.3 Production and Cost



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CONSIDER

Why would a firm decide to store its products in a warehouse rather than offer them for sale?

What's the meaning of the old expression "Too many cooks spoil the broth"?

Can a firm shut down without going out of business?

Why do movie theaters have so many screens?

Why is bigger not always better when it comes to the size of a firm?

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5.1 The Supply Curve

Objectives

- Understand the law of supply.
- Describe the elasticity of supply, and explain how it is measured.

Overview

Just as consumer behavior shapes the demand curve, producer behavior shapes the supply curve. When studying demand, you should think like a consumer, or a demander. When studying supply, however, you must think like a producer, or a supplier. You may feel more natural as a consumer—after all, you are a consumer. But you know more about producers than you may realize. You have been around them all your life—Wal-Mart, Subway, Blockbuster, Exxon, McDonald's, Microsoft, KFC, Ford, Home Depot, Sears, Gap, Google, and thousands more. You will draw on this knowledge to develop an understanding of supply and the supply curve.

Key Terms

supply

law of supply

supply curve

elasticity of supply

In the News

Toys and Games Are Not Fun and Games for Suppliers

It seems like every year there is a new toy released for Christmas that becomes the must-have gift of the season. It began in 1985 with the Cabbage Patch Doll. A decade later came Tickle Me Elmo. The result was long lines, sell-outs, and consumer frustration. The 2005 version of the Christmas toy story starred Microsoft's Xbox 360. Because Xboxes take time to develop and manufacture, Microsoft faced challenges trying to supply enough to meet the peak December demand. So while Microsoft had about half a million Xboxes on hand, this still was not enough to meet consumer demand, and stores quickly sold out. Economic theory suggests that the Xboxes were priced too low. A higher price would have reduced quantity demanded, and Microsoft would have made more profit. During the Christmas season, while Xboxes were being sold in stores for $300, they were being offered on eBay for $700. So why did Microsoft keep its price at $300?

THINK ABOUT IT

Economist Tim Harford, author of *The Underground Economist,* posed this problem and received a number of explanations. Some analysts suggested that the shortage was a deliberate attempt by Microsoft to limit supply. Harford rejects this explanation because the advantage of limiting supply is negated if Microsoft doesn't raise the price. What other explanations might there be?

Sources: "The Coveted Sellout Situation: Toymakers Tinker with the Balance of Supply and Demand," *Washington Post,* December 23, 2005; Tim Harford, "Everyday Economics: The Great Xbox Shortage of 2005," *Slate,* December 15, 2005, www.slate.com; Tim Harford, "Everyday Economics: Xbox Economics, Part 2," *Slate,* December 21, 2005, www.slate.com.

Law of Supply

With demand, the assumption is that consumers try to maximize utility, a goal that motivates their behavior. With supply, the assumption is that producers try to maximize profit. Profit is the goal that motivates the behavior of suppliers.

Role of Profit

A firm tries to earn a profit by transforming resources into products. Profit equals total revenue minus total cost. A firm's total revenue is the total sales, or total dollars, received from consumers for the day, week, or year. Recall that total revenue equals the price times the quantity sold at that price. Total cost includes the cost of all resources used by a firm in producing goods or services, including the entrepreneur's opportunity cost.

$$\text{Profit} = \text{Total revenue} - \text{Total cost}$$

When total revenue just covers total cost, a firm *breaks even*. Over time, total revenue must cover total cost for the firm to survive. If total revenue falls short of total cost year after year, the firm will fail.

Each year, millions of new firms enter the U.S. marketplace and nearly as many leave. The firms must decide what goods and services to produce and what resources to employ. Firms must make plans while facing uncertainty about consumer demand, resource availability, and the intentions of other firms in the market. The lure of profit is so strong that entrepreneurs are always eager to pursue their dreams.

Supply

Just as demand is a relation between price and quantity demanded, supply is a relation between price and quantity supplied. **Supply** indicates how much of a good producers are *willing* and *able* to offer for sale per period at each possible price, other things constant. The **law of supply** says that the quantity supplied is usually directly related to its price, other things constant. Thus, the lower the price, the smaller the quantity supplied. The higher the price, the greater the quantity supplied.

Figure 5.1 presents the market *supply schedule* and market **supply curve** *S* for pizza. Both show the quantities of 12-inch pizzas supplied per week at various possible prices by the many pizza makers in the market. As you can see, price and quantity supplied are directly (or positively) related, other things constant. The supply curve shows, for exam-

supply
A relation showing the quantities of a good producers are willing and able to sell at various prices during a given period, other things constant

law of supply
The quantity of a good supplied during a given time period is usually directly related to its price, other things constant

supply curve
A curve or line showing the quantities of a particular good supplied at various prices during a given time period, other things constant

Main Idea

Profit and Entrepreneurs

Entrepreneurs take the risks of organizing productive resources to make goods and services. **A restaurant venture is an especially risky business that uses the productive resources of people and food to prepare and serve meals to customers.** ***The profit incentive leads restaurant entrepreneurs to accept the risks of business failure.***



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The Supply Schedule and Supply Curve for Pizza

Figure 5.1

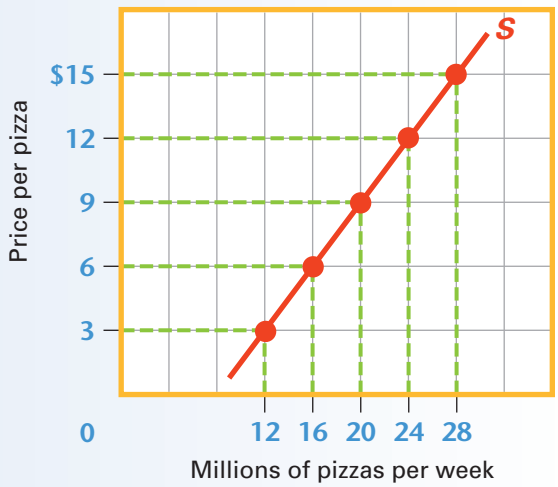
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Market supply curve S shows the quantity of pizza supplied, at various prices, by all pizza makers.

(a) Supply schedule

Price per Pizza	Quantity Supplied per Week (millions)
$15	28
12	24
9	20
6	16
3	12

(b) Supply curve



ple, that at a price of $6 per pizza, the quantity supplied is 16 million per week. At a price of $9 per pizza, the quantity supplied increases to 20 million.

Like the demand curve, the supply curve represents a particular period of time. It shows quantity supplied per period. For any supply curve, it is assumed that the prices of other goods the business could produce using these same resources remain unchanged. Thus, along the supply curve for pizza, the price of pizza changes *relative to other prices,* which do not change. The supply curve shows the effect of a change in the *relative price* of pizza—that is, relative to the prices of other goods the resources could supply. Producers supply more pizza at a higher price than at a lower price, so the supply curve slopes upward.

More Willing to Supply

Producers offer more for sale when the price rises for two reasons. First, as the price increases, other things constant, a producer becomes more *willing* to supply the good. Prices act as signals to existing and potential suppliers about the rewards for producing various goods. An increase in the price of pizza, with other prices remaining constant, creates an incentive to shift some resources out of producing other goods, whose prices are now relatively lower, and into pizza, whose price is now relatively higher. *A higher pizza price makes supplying pizza more profitable and attracts resources from lower-valued uses.*

More Able to Supply

Higher prices also increase the producer's *ability* to supply the good. The cost of producing an additional unit of a good usually rises as output increases—that is, the *marginal cost* of production increases as output increases. (You will learn more about marginal cost in Lesson 5.3.) Because suppliers face a higher marginal cost of producing the good, they must receive a higher price to be *able* to increase the quantity supplied. *A higher price makes producers more able to increase quantity supplied.*

For example, a higher price for gasoline in recent decades increased producers' ability to search for oil in less-accessible areas, such as the remote jungles of the Amazon, the oil-sands of the Canadian West, the stormy waters of the North Sea, and the frozen tundra above the Arctic Circle. Thus, the quantity of oil supplied increased as the price increased. On the other hand, gold prices fell more than half between 1980 and 2000, so producers were no longer able

to mine gold in less-accessible regions or where the ore contains less gold. As the price declined, the quantity supplied decreased. A rebound in gold prices since 2000, however, has rejuvenated gold production.

In short, a higher price makes producers more *willing* and better *able* to increase quantity supplied. Suppliers are more *willing* because production of the higher-priced good now is more profitable than the alternative uses of the resources involved. Suppliers are better *able* because the higher price allows them to cover the higher marginal cost that typically results from increasing production.

Supply Versus Quantity Supplied

As with demand, economists distinguish between *supply* and *quantity supplied*. *Supply* is the entire relation between the price and quantity supplied, as shown by the supply schedule or supply curve. *Quantity supplied* refers to a particular amount offered for sale at a particular price, as shown by a point on a given supply curve. Thus, it is the *quantity supplied* that increases with a higher price, not *supply*. The term *supply* by itself refers to the entire supply schedule or supply curve.

Individual Supply and Market Supply

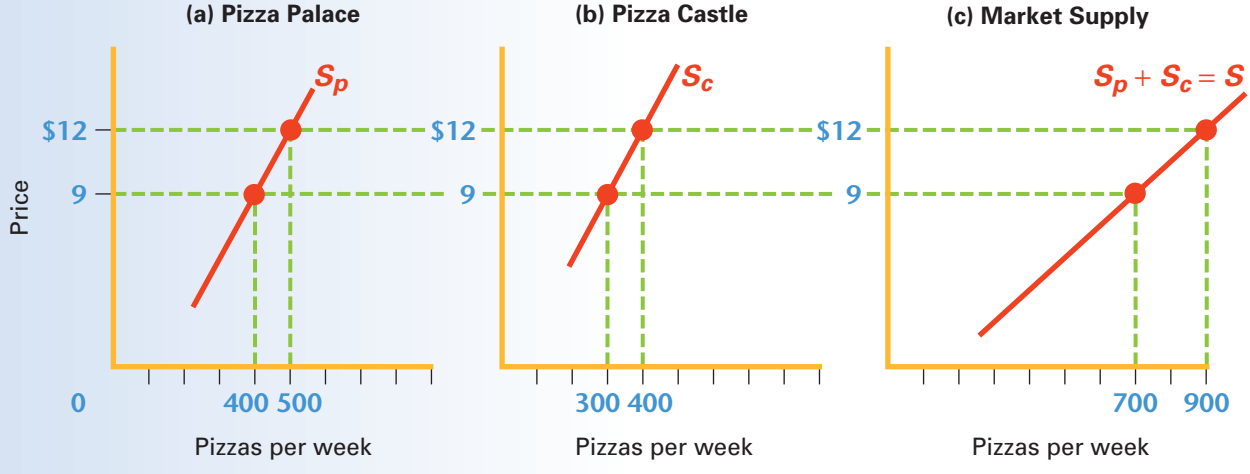
Economists also distinguish between *individual supply* (the supply of an individual producer) and *market supply* (the supply of all producers in the market for that good). *The market supply curve shows the total quantity supplied by all producers at various prices.*

In most markets, there are many suppliers, sometimes thousands. Assume for simplicity, however, that there are just two suppliers in the market for pizza: Pizza Palace and Pizza Castle. Figure 5.2 shows how the supply curves for two producers in the pizza market are added together to yield the market supply curve for pizza. Individual supply curves are summed across to get a market supply curve.

For example, at a price of $9, Pizza Palace supplies 400 pizzas per week and Pizza Castle supplies 300. Thus, the quantity supplied in the market for pizza at a price of $9 is 700. At a price of $12, Pizza Palace supplies 500 and Pizza Castle supplies 400, for a market supply of 900 pizzas per week. The market supply curve in panel (c) of Figure 5.2 shows the horizontal sums of the individual supply curves in panels (a) and (b).

The market supply curve is simply the horizontal sum of the individual supply

Summing Individual Supply Curves to Find the Market Supply Curve — **Figure 5.2**



The market supply curve is the horizontal sum of all individual supply curves.

curves for all producers in the market. Unless otherwise noted, when this book talks about supply, you can take that to mean market supply.

✓CHECKPOINT

Explain the law of supply in your own words.

Elasticity of Supply

Prices are signals to both sides of the market about the relative scarcity of products. High prices discourage consumption but encourage production. Elasticity of demand measures how responsive consumers are to a price change. Likewise, elasticity of supply measures how responsive producers are to a price change.

Measurement

Elasticity of supply is calculated in the same way as elasticity of demand. **Elasticity of supply** equals the percentage change in quantity supplied divided by the percentage change in price.

$$\text{Elasticity of supply} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$

Suppose the price increases. Because a higher price makes production more attractive, the quantity supplied increases as the price increases.

Figure 5.3 depicts the typical upward-sloping supply curve presented earlier. As you can see, if the price of pizza increases from $9 to $12, the quantity supplied increases from 20 million to 24 million. What's the elasticity of supply between these two points? The percentage change in quantity supplied is the change in quantity supplied—4 million—divided by 20 million. So quantity supplied increases by 20 percent. The percentage change in price is the change in price—$3—divided by $9, which is 33 percent.

Elasticity of supply is, therefore, the percentage increase in quantity supplied—20 percent—divided by the percentage increase in price—33 percent—which equals 0.6.

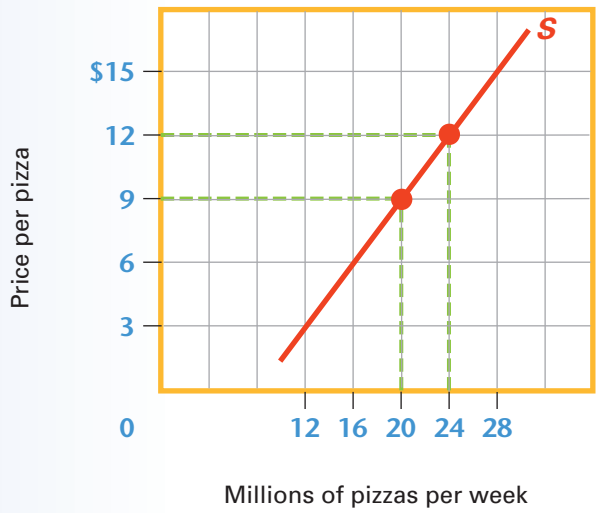
elasticity of supply
A measure of the responsiveness of quantity supplied to a price change; the percentage change in quantity supplied divided by the percentage change in price

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The Supply of Pizza — **Figure 5.3**

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If the price increases from $9 to $12, the quantity of pizza supplied increases from 20 million to 24 million per week.



Span the Globe

Mongolian Goats and the Price of Cashmere Sweaters

Think there's a connection between the $500 price tag on that four-ply cashmere sweater and a herd of Mongolian goats? You bet there is. Cashmere comes from the hair of cashmere goats, the majority of which are raised in Mongolia and northern China. Although those regions have a lot of goats, each one yields only about 2 1/2 pounds of fleece per shearing. That 2 1/2 pounds, in turn, produces only about 5 ounces of usable cashmere fiber after the labor-intensive job of cleaning and de-hairing. Consequently, the price of the warmer, softer cashmere usually is far higher than its competitor, wool. In past years, Mongolia's exports of this unique product have grown dramatically. Mongolian cashmere exports totaled around 2,000 tons in 2002 and have risen to more than 2,800 tons projected for export in 2006. The number of goats has increased in turn, from 10 million in 2002 to near 13 million in early 2006. Unfortunately for the Mongolian producers, the price of cashmere currently is down to $12 a pound from a high of almost $20 per pound in 2002. This price decline has caused the Mongolian herders to stockpile tons of surplus raw cashmere, awaiting a higher price, and has led to calls for the Mongolian government's regulation of the cashmere industry.

THINK CRITICALLY

In the short run (over the next few months), is Mongolia's supply of cashmere elastic or inelastic along the supply curve at the price of $12 per pound? Mongolia barely raises enough food for its people, much less its animals. In view of this, would you consider the longer-term response to the $12 price to be elastic or inelastic? Explain your answer.

Sources: Patrick Fowlow, "The Cash in Cashmere: Why Is Nature's Most Efficient Thermal So Cheap This Year?" *Edmonton Journal,* January 10, 2006; "Cashmere Manufacturers Struggle to Compete," *UB (Ulan Bator) Post,* April 6, 2006; "Goats: Love for Cashmere Grows into Affection for Flock," *Las Vegas Review Journal,* February 3, 2003.

Categories of Supply Elasticity

The terms for supply elasticity are the same as for demand elasticity. If supply *elasticity* exceeds 1.0, supply is *elastic*. If it equals 1.0, supply is *unit elastic*. If supply elasticity is less than 1.0, it is *inelastic*. Because 0.6 is less than 1.0, the supply of pizza is inelastic when the price increases from $9 to $12. Note that elasticity usually varies along a supply curve.

Determinants of Supply Elasticity

Elasticity of supply indicates how responsive producers are to a change in price. Their responsiveness depends on how costly it is to alter output when the price changes. If the cost of supplying an additional unit rises sharply as output expands, then a higher price will generate little increase in quantity supplied, so supply will tend to be inelastic. However, if the cost of an additional unit rises slowly as output expands, the profit lure of a higher price will prompt a relatively large boost in output. In this case, supply will be more elastic.

One important determinant of supply elasticity is the length of the adjustment period under consideration. Just as demand becomes more elastic over time as consumers adjust to price changes, supply also becomes more elastic over time as producers adjust to price changes. The longer the time period under consideration, the more easily producers can adjust. For example, a higher oil price will prompt suppliers to pump more from existing wells in the short run. However, in the long run, suppliers can explore for more oil.

Figure 5.4 demonstrates how the supply of gasoline becomes more elastic over time, with a different supply curve for each of three periods of adjustment. S_w is the supply curve when the period of adjustment is a week. As you can see, a higher gasoline price will not prompt much of a response in quantity supplied because firms have little time to adjust. This supply curve is inelastic if the price increases from $3.00 to $3.50 per gallon.

S_m is the supply curve when the adjustment period under consideration is

a month. Firms have a greater ability to vary output in a month than they do in a week. Thus, supply is more elastic when the adjustment period is a month than when it's a week. Supply is even more elastic when the adjustment period is a year, as is shown by S_y. A given price increase in gasoline prompts a greater quantity supplied as the adjustment period lengthens. Research confirms the positive link between the elasticity of supply and the length of the adjustment period. *The elasticity of supply is typically greater the longer the period of adjustment.*

The ease of increasing quantity supplied in response to a higher price differs across industries. The long run will be longer for producers of electricity and timber (where expansion may take years) than for window washing and hot-dog vending (where expansion may take only days).

✓CHECKPOINT

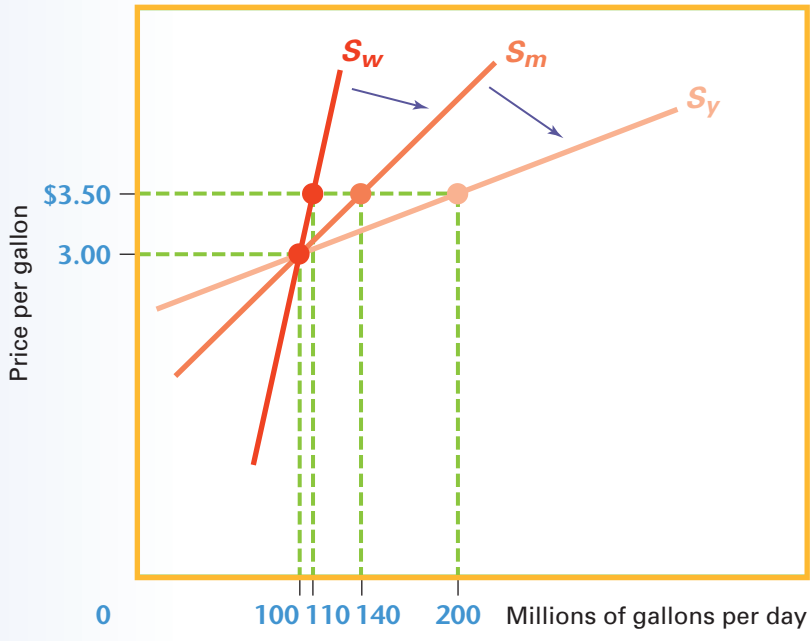
What does the elasticity of supply measure, and what factors influence its numerical value?



Working in small groups, think of five industries other than those given as examples in Section 5.1 of this textbook. For each industry, describe the product or services sold, as well as the means of distribution, such as retail stores, online, or wholesale. Rank these industries in order of the time the industry needs to adjust to a price change. Give a ranking of 1 to industries that would require the least amount of time to adjust fully to a price change and a 5 to those that would require the most time. Provide an explanation for each of your rankings. Discuss your group's rankings in class.

Market Supply Becomes More Elastic Over Time **Figure 5.4**

The supply curve one week after a price increase, S_w, is less elastic, at a given price, than the curve one month later, S_m, which is less elastic than the curve one year later, S_y. In response to a price increase from $3.00 to $3.50, quantity supplied per day increases to 110 million gallons after one week, to 140 gallons after one month, and to 200 million gallons after one year.



Assessment 5.1

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Key Concepts

1. In what ways are the motives of a pizza restaurant owner different from the motives of customers who buy the restaurant's pizza?
2. Why should the quantity of winter jackets supplied increase when there is an increase in the price of these jackets?
3. There are three restaurants that open at 7:00 A.M. to serve breakfast in a small community. Each one charges $4.00 for two eggs, bacon, toast, and a cup of coffee. Together they sell 220 breakfasts on an average weekday morning. What are the individual and market supply in this situation?
4. When the market price of kitchen chairs increases by 10 percent, producers increase the quantity supplied by 20 percent. Is supply elastic, unit elastic, or inelastic? Explain how you know your answer is correct. What is the measure of elasticity in this situation?
5. Why is supply elasticity likely to be greater for wooden bowls than for natural pearls?

Graphing Exercise

6. The owner of a shoe store reviewed her costs to determine how many pairs of running shoes she would be willing to supply each month at different prices. The results of her research appear in the supply schedule at the right. Use these data to construct her supply curve for running shoes. Explain how the graph demonstrates the law of supply.

Supply of Running Shoes

Price	Quantity Supplied
$70	100
$60	80
$50	60
$40	40
$30	20

Think Critically

7. **Mathematics** The table below shows how much cheese three dairies in a small community supply each month at the current price of $3.00 per pound. It also shows how much each one would supply if the price increased to $4.00. Calculate the percentage changes in price and in quantity supplied that would result from this price increase. What is the elasticity of supply for cheese in this market? Is supply elastic, unit elastic, or inelastic?

Supply of Cheese at $3.00 and $4.00 per pound

Dairy	Quantity Supplied at $3.00	Quantity Supplied at $4.00
A	1,000 pounds	1,300 pounds
B	1,700 pounds	2,600 pounds
C	2,300 pounds	3,100 pounds
Total Production	5,000 pounds	7,000 pounds

Sharpen Your Skills



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Understand Cause and Effect

In economics, as in most other fields of study, things don't "just happen." There is a logical reason, or a cause, for almost every economic event. One goal of studying economic events that have taken place in the past is to learn about their causes so we can predict what will happen when similar events take place in the future. Consider each of the following events from American history and their results. What can you learn that could help you better understand future economic events?

In 1892, workers at the Carnegie Steel Plant in Homestead, Pennsylvania, went on strike, closing down this factory. This reduced the supply of steel and may have contributed to workers at other factories that used steel being laid off.

In 1903, the Wright brothers were credited with making the first powered flight. This led to a new mode of transportation that millions of Americans now use each year. With a few exceptions, the supply curve of air transportation has steadily moved to the right over time.

In 1929, the stock market crash contributed to the failure of thousands of U.S. businesses and the onset of the Great Depression of the 1930s. The supply of many products fell during the early years of the Great Depression.

In 1938, the Fair Labor Standards Act was passed that established the 40-hour workweek. This caused some businesses to hire additional workers to avoid paying workers overtime wages and may have increased their cost of production. If this was true, the supply curve for these firms' products would have shifted to the left.

Apply Your Skill

1. At the beginning of 2003, President George W. Bush suggested reducing taxes for businesses that purchased new machinery or hired additional workers. Describe the effect that this suggested policy was intended to cause. How would it affect the supply of many products in the U.S. economy?
2. In 2003, farmers in central California were told that they were taking more than their share of water from the Colorado River. They were ordered to plan to reduce the amount of water they took for irrigation. Nearly a third of the lettuce and many other vegetables grown in the United States are produced in central California. If this ruling were enforced, what might happen to the supply of vegetables American consumers could buy?

5.2 Shifts of the Supply Curve

Objectives

- Identify the determinants of supply, and explain how a change in each will affect the supply curve.
- Contrast a movement along the supply curve with a shift of the supply curve.

Overview

The supply curve illustrates the relation between the price of a good and the quantity supplied, other things constant. Assumed constant along a supply curve are the determinants of supply other than the good's price. There are five such determinants of supply. A change in one of these determinants of supply causes a shift of the supply curve. This contrasts with a change in price, other things constant, which causes a movement along a supply curve.

Key Terms

movement along a supply curve

shift of a supply curve

In the News

Gasoline's Long Supply Chain

A major limitation on the supply of gasoline in the United States is our ability to refine crude oil. The United States has nearly 150 refineries, but not a single new refinery has been built since 1976. Environmental regulations on existing refineries and local concerns against new refineries are part of the reason production has not grown. How much U.S. refineries can supply also is limited by the type of oil and the equipment it uses. Today the United States refines only 80 percent of the gasoline it consumes, making it the only major nation unable to refine enough oil to supply its demand. Supply also is affected by the fact that not all gasoline is created alike. Local regulations differ from state to state and region to region. This has led to an increased demand for low sulfur crude oil because it produces more environmentally sound gas and other products. Today there are about 18 different types of gas sold in the United States. Places such as California as well as Chicago and Milwaukee require cleaner-burning fuel. This limits the industry's ability to move supplies from one region to another to meet fluctuations in demand.

THINK ABOUT IT

How would each of the following affect the supply of gas in the United States: political unrest in oil producing countries; shutting down refineries for improvements or routine maintenance; a natural disaster that shuts down 15 percent of the nation's refineries; or a requirement by more states that automobiles use cleaner-burning fuel?

Sources: *Annual Energy Outlook 2006,* Energy Information Administration: Department of Energy; Lenardo Maugeri, "Two Cheers for Expensive Oil," *Foreign Affairs,* April, 2006.

Determinants of Supply

Because each firm's supply curve is based on the cost of production and profit opportunities in the market, anything that affects production costs and profit opportunities helps shape the supply curve. Following are the five determinants of market supply other than the price of the good:

1. The cost of resources used to make the good
2. The prices of other goods these resources could make
3. The technology used to make the good
4. Producer expectations
5. The number of sellers in the market

Changes in the Cost of Resources

Any change in the cost of resources used to make a good will affect the supply of the good. For example, suppose the cost of mozzarella cheese falls. This reduces the cost of making pizza. Producers are therefore more willing and able to supply pizza at each price, as reflected by a rightward shift of the supply curve from S to S' in Figure 5.5. After the shift, the quantity supplied increases at each price level. For example, at a price of $12, the quantity supplied increases from 24 million to 28 million pizzas a week, as shown by the movement from point g to point h. In short, *an increase in supply—that is, a rightward shift of the supply curve—means that producers are more willing and able to supply pizza at each price.*

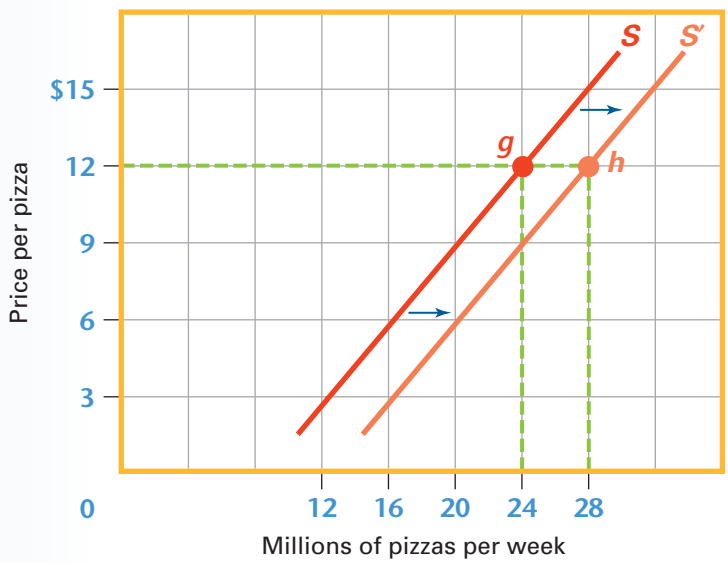
What about an increase in the cost of a resource used to make pizza? This means that at every level of output, the cost of supplying pizza increases. An increase in the cost of a resource will reduce the supply of pizza, meaning a leftward shift of the supply curve. For example, if the wage of pizza workers increases, the higher labor cost would increase the cost of production, so pizza becomes less profitable.

Higher production costs decrease supply, so pizza supply shifts leftward, as from S to S'' in Figure 5.6. After the decrease in supply, producers supply less at each price. For example, at a price of $12 per pizza, the quantity supplied declines

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An Increase in the Supply of Pizza — **Figure 5.5**

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An increase in the supply of pizza is reflected by a rightward shift of the supply curve, from S to S′. After the increase in supply, the quantity supplied per week increases at each price level. For example, the quantity of pizza supplied at a price of $12 increases from 24 million pizzas (point g) to 28 million pizzas (point h).

from 24 million to 20 million per week. This is shown in Figure 5.6 by the movement from point *g* to point *i*.

Changes in the Prices of Other Goods

Nearly all resources have alternative uses. The labor, building, machinery, ingredients, and knowledge needed to make pizza could produce other products, such as calzones, bread sticks, rolls, and other baked goods.

A change in the price of another good these resources could make affects the opportunity cost of making pizza. For example, if the price of rolls falls, the opportunity cost of making pizza declines. These resources are not as profitable in their best alternative use, which is making rolls. So pizza production becomes relatively more attractive. As some resources shift from baking rolls to making pizza, the supply of pizza increases, or shifts to the right, as shown in Figure 5.5.

On the other hand, if the price of rolls increases, so does the opportunity cost of making pizza. Some pizza makers may bake more rolls and less pizza, so the supply of pizza decreases, or shifts to the left, as in Figure 5.6. A change in the price of another good these resources could produce affects the profit opportunities of pizza makers.

Changes in Technology

Technology represents the economy's stock of knowledge about how to combine resources efficiently. Discoveries in chemistry, biology, electronics, and many other fields have created new products, improved existing products, and lowered the cost of production. For

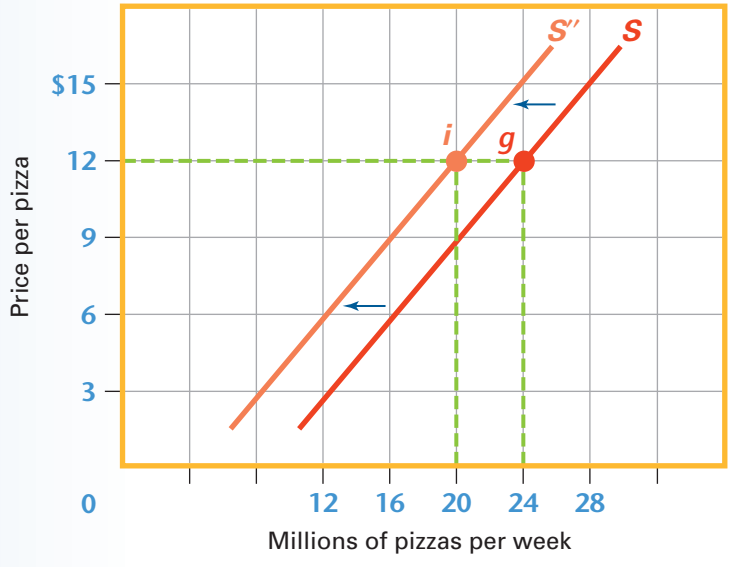
NET Bookmark

Advances in technology used to produce goods represent an important determinant of supply. Access the New Scientist web site through thomsonedu.com/school/econxtra. Surf the site to identify new scientific breakthroughs that will influence the manufacturing of both existing and new products. Make a list of at least three new manufacturing-related technologies you find on the web site. Write a brief description of each, and be prepared to discuss these technologies in class.

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A Decrease in the Supply of Pizza — **Figure 5.6**

A decrease in the supply of pizza is reflected by a leftward shift of the supply curve, from S to S″. After the decrease in supply, the quantity supplied per week decreases at each price level. For example, the quantity of pizza supplied at a price of $12 decreases from 24 million pizzas (point g) to 20 million pizzas (point i).



example, the first microprocessor, the Intel 4004, could execute about 400 computations per second when it hit the market in 1971. Today a standard PC can handle more than 3 billion computations per second, *or 7.5 million* times what the Intel 4004 could handle. Technological change—in this case, faster computers—lowers the cost of producing goods whose production involves computers, from automobile manufacturing to document processing.

Along a given market supply curve, technological know-how about how this good can be manufactured is assumed to remain unchanged. If a more efficient technology is discovered, the cost of production will fall, making this market more profitable. Improvements in technology make firms more willing and able to supply the good at each price. Consequently, supply will increase, as reflected by a rightward shift of the supply curve. For example, suppose a new high-tech oven that costs the same as existing ovens bakes pizza in half the time. Such a breakthrough would shift pizza supply rightward, as from S to S' in Figure 5.5, so more is supplied at each possible price.

Changes in Producer Expectations

Producers transform resources into goods they hope to sell for a profit. Any change that affects producer expectations about profitability can affect market supply. For example, if pizza makers expect the price to increase in the future, some may expand their production capacity now. This would shift the supply of pizza rightward, as shown in Figure 5.5.

Some goods can be stored easily. For example, crude oil can be left in the ground and grain can be stored in a silo. Expecting higher prices in the future might prompt some producers to *reduce* their current supply while awaiting the higher price. This would shift the current supply curve to the left, as shown in Figure 5.6. Thus, an expectation of higher prices in the future could either increase or decrease current supply, depending on the good.

Investigate Your Local Economy

Businesses generally pay income taxes to local, state, and the federal government. Contact your local government's bureau of taxation. Find out the current tax rate for businesses. Also find the rate for the past five years. Has an increase or decrease in the tax rate affected supply in your area? Write a paragraph to explain your findings.

Changes in the Number of Suppliers

General changes in the market environment also can affect the number of suppliers in that market. For example, government regulations may influence market supply. As a case in point, for decades government strictly regulated the prices and entry of new firms in a variety of industries including airlines, trucking, and telecommunications. During that era, the number of firms in each market was artificially limited by these government restrictions. When these restrictions were eased, more firms entered these markets, increasing supply.

More generally, any government action that affects a market's profitability, such as a change in business taxes, could shift the supply curve. Lower business taxes will increase supply and higher business taxes will reduce supply.

✓ CHECKPOINT

What are the five determinants of supply, and how do changes in each affect the supply of a good?

movement along a supply curve
Change in quantity supplied resulting from a change in the price of the good, other things constant

shift of a supply curve
Increase or decrease in supply resulting from a change in one of the determinants of supply other than the price of the good

Movements Along a Supply Curve Versus Shifts of a Supply Curve

Note again the distinction between a *movement along a supply curve* and a *shift of a supply curve*. A change in *price*, other things constant, causes a **movement along a supply curve** from one price-quantity combination to another. A change in one of the determinants of supply other than the price causes a **shift of a supply curve**, changing supply. A shift of the supply curve means a change in the quantity supplied at each price.

A change in price, other things constant, changes quantity supplied along a given supply curve. A change in a determinant of supply other than the price of the good—such as the cost of resources used to make the good, the price of other goods these resources could produce, technology used to make the good, producer expectations, or the number of firms in the market—shifts the entire supply curve to the right or left.

✓ CHECKPOINT

Explain the difference between a movement along a supply curve and a shift of a supply curve.

e-conomics

iPod EXPLOSION SPREADS

France's minister of culture is pressing to outlaw them. A recent law suit alleges that iPods produce sounds at more than 115 decibels, a level that can damage a person's hearing if exposed for more than 28 seconds per day. Nonetheless, iPod sales are booming. The most recent quarterly sales figures showed 14 million sold in comparison to 4.5 million in the same quarter of the previous year. Of the 14 million sold, 8 million were of the new video iPod introduced in October of that quarter. Buoyed by iPod sales and tie-in sales from iTunes downloads of more than 850 million songs (83 percent of the legal download market), the iPod's maker, Apple Computer, Inc., reported revenue of $5.7 billion in the fourth quarter of 2005.

THINK CRITICALLY

With the surging sales of the iPod and related products, Apple has shifted from being a niche supplier of computers to the dominant seller of portable media devices. Do you think Apple will continue to enjoy such success? Why or why not?

Sources: Mike Kobrin, "Turn That Music Down: Will a Lawsuit Quiet America's Favorite Little Noisebox?" *PC Magazine,* February 3, 2006; "Apple Unveils Intel-powered Computers as iPod Sales Boom," Agence France Presse, January 10, 2006.

Assessment 5.2

Key Concepts

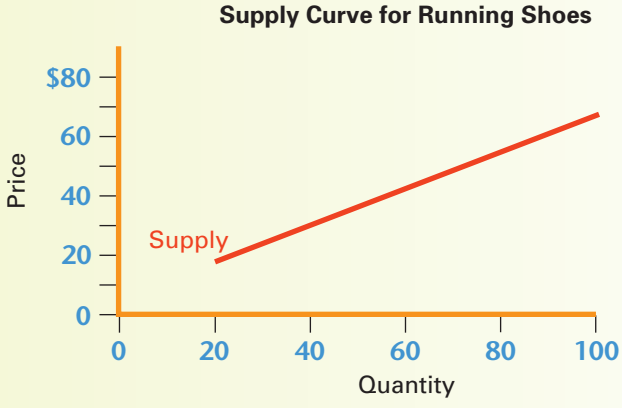
1. One year a farmer grows corn on his 200 acres of land. He sells his corn in September for $3.00 per bushel. Early the next spring he notices that the price of soybeans has gone up 50 percent while the price of corn has remained the same. What will probably happen to his supply curve for corn? Explain your answer.
2. The Apex Plastics Corp. finds a new way to produce plastic outdoor furniture from recycled milk bottles at very low cost. What will happen to the supply curve for plastic furniture? Explain your answer.
3. A big storm destroys most of the sugarcane crop in Louisiana. Most people expect this to cause a large increase in the price of sugar in a few months. What will happen to the supply curve for sugar today?
4. The cost of crude oil increases by 25 percent. Crude oil is the raw material used to produce plastic. What will this do to the supply curve for plastic toys?
5. How might an increase in wages in general shift both the demand curve and supply curve for pizza?

Xtra! Study tools

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Graphing Exercise

6. Make a copy of the supply curve. Draw and explain the shifts of the market supply on your copy that would result from each of the following events. Label each shift of the supply curve.
   a. There is an increase in the cost of rubber used to produce the soles of running shoes.
   b. There is a decrease in the market price of rubber tires.
   c. A new machine is invented that produces running shoes using only one-third as many workers.
   d. A new mall is built in town with three stores that sell running shoes.



Think Critically

7. **Research** Use newspapers, magazines, or the Internet to research a world event that could have an impact of the supply of a product consumed in the United States. Describe this event and explain how it might shift the U.S. supply curve.
8. **Technology** Choose a single product many consumers buy, and write a paragraph that discusses whether the creation of the Internet has shifted the supply curve for this product.

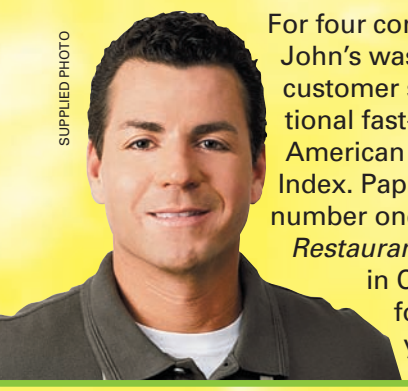
movers + shakers

John Schnatter *Founder, Papa John's Pizza*

During high school and college, John Schnatter earned spending money by working part-time in national-chain pizzerias. He noticed something missing from every one of them: No one was making a superior-quality pizza that could be delivered directly to the customer. He dreamed of one day opening his own pizza restaurant, doing everything right.

In 1984, Schnatter graduated from Ball State University with a degree in business administration and returned home to Jeffersonville, Indiana. There he took the first step to introduce the world to his own superior pizza. First he knocked out a broom closet in the rear of his father's business. Then he sold his beloved 1972 Camaro to buy $1,600 worth of used restaurant equipment, including his first pizza oven. The first Papa John's restaurant opened in 1985. Less than twenty years later 3,300 Papa John's restaurants operate in 49 states and 22 countries.

Schnatter's successful business philosophy is to focus on one thing and do it better than anyone else. He keeps the menu simple and uses only superior-quality ingredients. He insists on using fresh (never frozen) water-purified traditional dough, vine-ripened fresh-packed tomato sauce, and 100 percent mozzarella cheese.



SUPPLIED PHOTO

For four consecutive years, Papa John's was rated number one in customer satisfaction among all national fast-food restaurants in the American Customer Satisfaction Index. Papa John's also was rated number one in product quality in the *Restaurants & Institutions'* Choice in Chains consumer survey for seven consecutive years. In 2000, Papa John's became the third-largest pizza company in the world.

Schnatter established his company headquarters in Louisville, Kentucky, and is one of Louisville's most successful business leaders. In 2006, Schnatter's stock in the company was worth more than $100 million. At age 43, this young entrepreneur is generous with his wealth.

The pizza market has presented Papa John's with some obstacles. In 2001, the industry became stagnant, partly because of increasingly strong competition from frozen grocery pizzas. When things didn't change in 2002, Papa John's largest rivals, Pizza Hut and Dominos, focused on offering deep discounts to customers to increase sales. Instead of following suit, Schnatter decided his company would focus on product quality and manager retention. He spent between $6 million and $7 million on these two efforts alone. Schnatter said he believes that "consistently getting a better product out the door" will result in improved sales, adding that one way to enhance quality is to reduce staff turnover. The company also has begun online ordering.

Profit dropped in 2003 and 2004, yet Papa John's remains the world's third-largest pizza company behind Pizza Hut and Domino's. In 2002 profit was $46.8 million. It fell to $33.6 million in 2003, and ended 2004 at $23.2 million. But in 2005 profit recovered to $46.1 million.

As Papa John's founder and Chairman of the Board, Schnatter continues to be enthusiastic about making superior-quality pizzas that can be delivered directly to the customer. "I love the product, I like the people, I love the business. You've got to understand I've been doing this since I was 15 . . . It's all I know."

SOURCE READING

Analyze the quotations attributed to John Schnatter. From these statements, what qualities do you think he possesses that make him a successful entrepreneur?

ENTREPRENEURS IN ACTION

In small groups, role-play Papa John's Board of Directors, with one student portraying Schnatter. The company is faced with stiff competition from frozen grocery pizzas and deep discounting from its direct competitors. Discuss the steps management needs to take in order to keep the company growing.

Sources: <http://pmqnews.com/papa_johns_quality_initiative.htm>; <http://louisville.bizjournals.com/louisville/stories/2001/11/26/story2.html>; http://www.papajohns.com <http://www.papajohns. com>; http://www.louisville.com/voice/schnat113.shtml; http://www.forbes.com/finance/mktguideapps/personinfo/FromPersonIdPersonTearsheet/jhtml?passedPersonId=170010

5.3 Production and Cost

Objectives

- Understand how marginal product varies as a firm hires more labor in the short run.
- Explain the shape of the firm's marginal cost curve and identify what part of that is the firm's supply curve.
- Distinguish between economies of scale and diseconomies of scale in the long run.

Overview

How much will a firm supply in order to maximize profit? The answer to this question requires a brief introduction to how a firm converts productive resources into outputs. In general, a profit-maximizing firm will supply more output to the market as long as the marginal revenue from each unit sold exceeds its marginal cost. But no firm is guaranteed a profit in a market economy. Some firms just break even and others face losses that eventually drive them out of business. Still, just the promise of profit attracts a steady stream of entrepreneurs.

Key Terms

short run

long run

total product

marginal product

law of diminishing returns

fixed cost

variable cost

total cost

marginal cost

marginal revenue

economies of scale

long-run average cost curve

In the News

At the Local Megaplex

Have you ever wondered why movie theaters seem to be offering moviegoers more and more screens? Think about it in this way: A theater with one screen needs someone to sell tickets, someone to sell popcorn, and someone to operate the projector. If another screen is added, the same staff can perform these tasks for both screens. Thus, the ticket seller becomes more productive by selling tickets to both movies. Also, construction costs per screen are reduced because only one lobby and one set of rest rooms are required. The theater can run bigger, more noticeable newspaper ads and can spread the cost over more films. From 1990 to 2000, the number of screens in the United States grew faster than the number of theaters, so the average number of screens per theater increased.

THINK ABOUT IT

As you read this section, look for the economic principle this situation illustrates. What do economists call this principle?

Sources: Joahn Tagliabue, "Now Playing Europe: Invasion of Multiplex," *New York Times,* January 27, 2000; Bruce Orwall and Gregory Zuckerman, "After Joining the Megaplex Frenzy, Regal Gets the Box-Office Blues," *Wall Street Journal,* September 27, 2000.

Production in the Short Run

short run
A period during which at least one of a firm's resources is fixed

long run
A period during which all of a firm's resources can be varied

total product
The total output of the firm per period

marginal product
The change in total product resulting from a one-unit change in a particular resource, all other resources constant

law of diminishing returns
As more of a variable resource is added to a given amount of fixed resources, marginal product eventually declines and could become negative

A firm tries to earn a profit by converting productive resources, or *inputs,* into goods and services, or *outputs.* Consider production at a hypothetical moving company called Hercules at Your Service.

Fixed and Variable Resources

All producers, like Hercules, use two categories of resources: fixed and variable. Resources that cannot be altered easily—the size of the building, for example—are called *fixed resources.* Hercules' fixed resources consist of a warehouse, a moving van, and some moving equipment. Resources that can be varied quickly to change output are called *variable resources.* In this example, assume that labor is the only variable resource.

When considering the time required to change the quantity of resources employed, economists distinguish between the short run and the long run. In the **short run**, at least one resource is fixed. In the **long run**, all resources can be varied. Hercules is operating in the short run because some resources are fixed. In this example, labor is the only resource that varies in the short run. A firm can enter or leave a market in the long run but not in the short run.

Figure 5.7 relates the amount of labor employed to the amount of furnishings moved. Labor is measured in worker-days, which is one worker for one day, and output is measured in tons of furnishings moved per day. The first column shows the total product per day, measured in tons of furniture moved. **Total product** is the total output of the firm per period—in this case, per day. The second column shows the number of workers required to produce that total product. The third column shows the **marginal product** of each worker—that is, the amount by which the total product changes with each additional worker, assuming other resources remain unchanged.

Ask the Xpert!
thomsonedu.com/school/econxtra
Why can't we feed the world from a flower pot?

Increasing Returns

Without labor, nothing gets moved, so total product is zero when no workers are hired. If one worker is hired, that person must do all the driving, packing, and moving. A single worker cannot easily move some of the larger items. Still, one worker manages to move 2 tons per day. When a second worker is hired, some division of labor occurs, and two can move the big stuff more easily, so production more than doubles to 5 tons per day. The marginal product of the second worker is 3 tons per day.

Adding a third worker allows for an even better division of labor, which contributes to increased production. For example, one worker can specialize in packing fragile items while the other two do the heavy lifting. The total product of three workers climbs to 9 tons per day, 4 tons more than with two workers. The firm experiences *increasing returns* from labor as each of the first three workers is hired, meaning that marginal product increases as more labor is hired.

Law of Diminishing Returns

Hiring a fourth worker adds to the total product but not as much as was added by a third worker. Hiring still more workers increases total product by successively smaller amounts, so the marginal product in Figure 5.7 declines after three workers. Beginning with the fourth worker, the **law of diminishing returns** takes hold. This law states that as more of one resource is added to all other resources, marginal product eventually declines. *The law of diminishing returns is the most important feature of production in the short run.*

As long as marginal product is positive, total product continues to increase. However, as additional workers are hired, total product may eventually decline. For example, an eighth worker would crowd the work area so much that people get in each other's way. As a result, total output would drop, meaning a negative marginal product. Likewise, a restaurant can hire only so many cooks before congestion and confusion in the kitchen cut total product. Hence the saying, "Too many cooks spoil the broth."

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Short-Run Relationship Between Units of Labor and Tons of Furniture Moved **Figure 5.7**

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As each of the first three workers is hired, the firm experiences increasing returns from labor. Marginal product increases as more labor is hired. Beginning with the fourth worker, the law of diminishing returns takes hold. This law states that as more units of one resource are added to all other resources, marginal product eventually declines.

Total Product (tons moved per day)	Units of the Variable Resource (worker-days)	Marginal Product (tons moved per day)
0	0	—
2	1	2
5	2	3
9	3	4
12	4	3
14	5	2
15	6	1
15	7	0
14	8	−1

Marginal Product Curve

Figure 5.8 shows the marginal product of labor, using data from Figure 5.7. Note that because of increasing returns, marginal product increases with each of the first three workers. Beginning with the fourth worker, diminishing returns cut marginal product. Marginal product turns negative if an eighth worker is hired. Figure 5.8 identifies three ranges of marginal product:

1. Increasing marginal returns
2. Diminishing but positive marginal returns
3. Negative marginal returns.

Firms normally produce in the range of diminishing but positive marginal returns.



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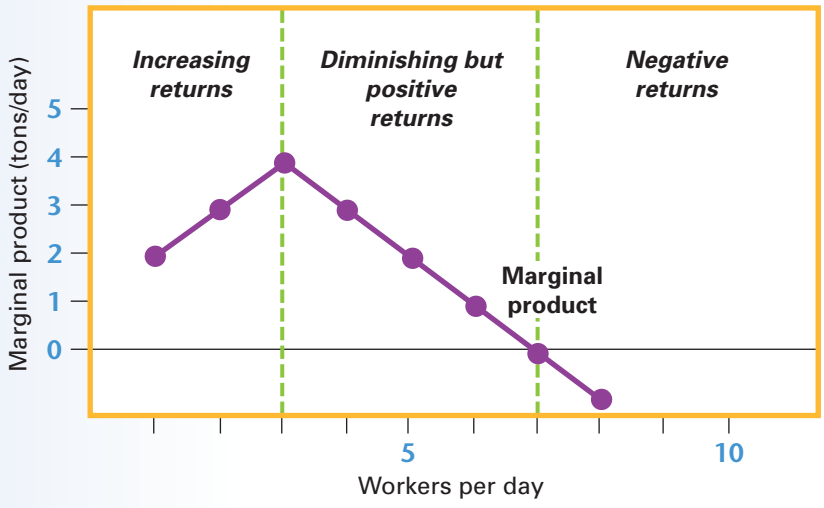
When Hercules at Your Service hires a second worker, division of labor occurs, and production more than doubles. What is total product and marginal product with two workers? With three workers? What happens when a fourth worker is hired?

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The Marginal Product of Labor — **Figure 5.8**

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The marginal product of the first three workers shows increasing returns. The next four workers show diminishing but positive returns, and the eighth worker shows negative returns.



✓ CHECKPOINT

How does marginal product vary as a firm employs more labor in the short run?

Costs in the Short Run

Now that you have some idea about production in the short run, consider how the firm's costs vary with output. A firm faces two kinds of costs in the short run: fixed cost and variable cost.

Fixed and Variable Costs

fixed cost
Any production cost that is independent of the firm's output

variable cost
Any production cost that changes as output changes

total cost
The sum of fixed cost and variable cost

A **fixed cost** is one that does not change in the short run, no matter how much is produced. A firm must pay a fixed cost even when nothing gets produced. Even if Hercules hires no labor and moves no furniture, the firm must pay for the warehouse, property taxes, insurance, vehicle registration, and equipment. By definition, fixed cost is just that—fixed. It does not vary with output in the short run. Fixed cost is sometimes called *overhead*. Hercules's fixed cost is $200 per day.

Variable cost varies with the amount produced. With Hercules, only labor varies in the short run, so labor is the only variable cost. For example, if Hercules hires no labor, output is zero, so variable cost is zero. As more labor is employed, output increases, as does variable cost. Variable cost depends on the amount of labor employed and on the wage. If the firm can hire each worker for $100 a day, variable cost equals $100 times the number of workers hired.

Total Cost

Figure 5.9 offers cost information for Hercules. The table lists the daily cost of moving furniture. Column 1 shows the number of tons moved per day. Column 2 indicates the fixed cost for each output total. By definition, fixed cost remains at $200 per day regardless of the amount moved. Column 3 shows the quantity of labor needed for each level of output. For example, moving 2 tons a day requires one worker, 5 tons requires two workers, and so on. Only the first six workers are listed, because more workers add nothing to total product.

Column 4 lists variable cost, which equals $100 times the number of workers employed. For example, the variable cost of moving 9 tons of furniture per day is $300 because this output requires three workers. Column 5 lists the **total cost**, which sums fixed cost and variable cost. As you can see, when output is zero, variable cost is zero, so total cost consists entirely of the fixed cost of $200.

Marginal Cost

Of special interest to the firm is how much total cost changes with output. In particular, what is the marginal cost of moving another ton? As shown in columns 6 and 7, the **marginal cost** of production is simply the change in total cost divided by the change in quantity, or

$$\text{Marginal cost} = \frac{\text{Change in total cost}}{\text{Change in quantity}}$$

For example, increasing output from 0 to 2 tons increases total cost by $100. The marginal cost of each of the first 2 tons is the change in total cost, $100, divided by the change in output, 2 tons, or $100/2, which equals $50. The marginal cost of each of the next 3 tons is the change in total cost, $100, divided by the change in output, 3 tons, or $100/3, which equals $33.33.

Notice in column 7 that marginal cost first decreases and then increases. Changes in marginal cost reflect changes in the productivity of the variable resource, labor. The first three workers show increasing returns. This rising marginal product of labor reduces marginal cost for the first 9 tons moved. Beginning with the fourth worker, the firm experiences diminishing returns from labor, so the marginal cost of output increases. Thus, marginal cost in Figure 5.9 first falls and then rises, because returns from labor first increase and then decrease.

NET Bookmark

Unit labor cost is the term used to describe the cost of labor per unit of output. Because labor costs generally represent the largest share of costs, this value is closely watched by businesspeople and analysts at the Federal Reserve. Look at the most recent data on unit labor costs at the Bureau of Labor Statistics web site. Access this web site through thomsonedu.com/school/econxtra. What is the current trend? What forces may be pushing unit labor costs downward? What does this mean for the profitability of firms?

thomsonedu.com/school/econxtra

marginal cost

The change in total cost resulting from a one-unit change in output; the change in total cost divided by the change in output

Short-Run Cost Data for Hercules at Your Service — **Figure 5.9**

1 Tons Moved per Day	2 Fixed Cost	3 Workers per Day	4 Variable Cost	5 Total Cost	6 Change in total cost ÷ Change in tons moved =	7 Marginal Cost
0	$200	0	$ 0	$200	—	
2	$200	1	$100	$300	$100 ÷ 2	$ 50.00
5	$200	2	$200	$400	$100 ÷ 3	$ 33.33
9	$200	3	$300	$500	$100 ÷ 4	$ 25.00
12	$200	4	$400	$600	$100 ÷ 3	$ 33.33
14	$200	5	$500	$700	$100 ÷ 2	$ 50.00
15	$200	6	$600	$800	$100 ÷ 1	$100.00

Column 7 shows the marginal cost of moving another ton of furnishings. It is the change in total cost divided by the change in tons moved.

Marginal Cost Curve

Figure 5.10 shows the marginal cost curve for moving furniture based on the data in Figure 5.9. Because of increasing returns from labor, the marginal cost curve at first slopes down. Because of diminishing marginal returns from labor, the marginal cost curve slopes up after 9 tons. Keep in mind that economic analysis is marginal analysis. Marginal cost is one key to the firm's production decision.

Marginal Revenue

To understand how firms work, it may help to draw on your knowledge of demand. Remember that demand is based on the marginal benefit that consumers get from buying each additional unit of the good. Likewise, supply is based on the marginal benefit that producers get from selling each additional unit of a good. The marginal benefit that producers get from supplying another unit is the **marginal revenue** they receive. This is the change in total revenue from selling that unit. In competitive markets, the firm's marginal revenue is the market price. A competitive firm receives the market price for selling one more unit.

marginal revenue
The change in total revenue from selling another unit of the good

Short-Run Losses and Shutting Down

In general, producers sell additional units as long as the marginal revenue they receive exceeds the marginal cost. In competitive markets, the firm supplies additional units as long as the price exceeds marginal cost. The firm's profit-maximizing level of output occurs where *marginal revenue equals marginal cost.* Thus, for a firm in competitive markets, the profit-maximizing level of output occurs where the market price equals marginal cost.

There is one qualification to this profit-maximizing rule. Sometimes the market price may be so low that production makes no economic sense. At the level of output where marginal revenue equals marginal cost, the firm's total revenue must at least cover its variable cost. A firm that can't cover variable cost will lose less in the short run by shutting down.

Here's the logic behind the shutdown decision. Even if the firm produces nothing in the short run, it must still pay fixed cost. If nothing is produced, the firm's loss equals fixed cost. For example, Hercules would lose $200 a day if no furniture gets moved.

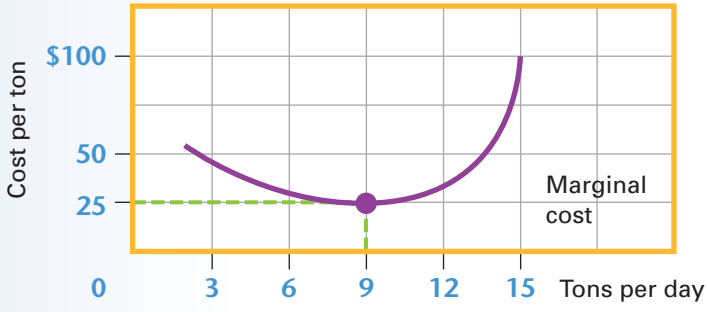
What if the market price is really low, but the firm decides to produce anyway and hires two workers for $200? Suppose the price is so low that the total revenue received from selling that output is only $150. That revenue pays none of the fixed cost and only a portion of the $200 in variable cost. The firm would not only lose its fixed cost of $200, but it also would lose $50 of variable cost. The firm would lose less—only $200—by shutting down. Why produce when doing so only increases any loss?

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Marginal Cost Curve for Hercules at Your Service — **Figure 5.10**

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Marginal cost first declines, reflecting increasing marginal returns, and then increases, reflecting diminishing marginal returns.



A firm's *minimum acceptable price* is a price high enough to ensure that total revenue at least covers variable cost. If the market price is below that minimum, the firm will shut down in the short run. Note that shutting down is not the same as going out of business. A firm that shuts down keeps its productive capacity intact—paying the rent, fire insurance, and property taxes, keeping water pipes from freezing in the winter, and so on. For example, auto factories sometimes shut down for a while when sales are slow. Businesses in summer resorts often shut down for the winter. These firms do not escape fixed cost by shutting down, because fixed cost by definition is not affected by changes in output.

If in the future the market price increases enough, the firm will resume production. If market conditions look grim and are not expected to improve, the firm may decide to leave the market. But that's a long-run decision. The short run is defined as a period during which some resources and some costs are fixed. A firm cannot escape those costs in the short run, no matter what it does. A firm cannot enter or leave the market in the short run.

The Firm's Supply Curve

To produce in the short run, the price must be high enough to ensure that total revenue covers variable cost. The *competitive firm's supply curve* is the upward sloping portion of its marginal cost curve at and above the minimum acceptable price. This supply curve shows how much the firm will supply at each price.

In the Hercules example, a price of $33.33 allows the firm to at least cover variable cost. Hercules's short-run supply curve is presented in Figure 5.11 as the upward-sloping portion of the marginal cost curve starting at $33.33. At that price, Hercules will supply 12 tons of moving a day. At a price of $50 per ton, the company will move 14 tons, and at a price of $100 per ton, the company will move 15 tons. The market supply curve sums individual supply curves for firms in the market.

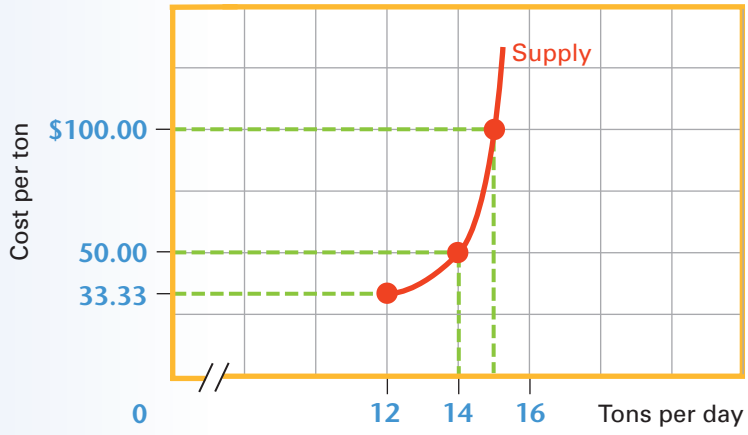
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✓CHECKPOINT

Why does the firm's marginal cost curve slope upward in the short run?

Supply Curve for Hercules at Your Service — **Figure 5.11**

A competitive firm's supply curve shows the quantity supplied at each price. The supply curve is the upward-sloping portion of its marginal cost curve, beginning at the firm's minimum acceptable price. The minimum acceptable price, in this case $33.33 per ton, is the lowest price that allows the firm's total revenue to cover its variable cost.



Production and Costs in the Long Run

So far, the analysis has focused on how short-run costs vary with output for a firm of a given size. In the long run, all inputs can be varied, so there are no fixed costs. What should be the size of the firm?

long-run average cost curve
A curve that indicates the lowest average cost of production at each rate of output when the firm's size is allowed to vary

Economies of Scale

Because all resources can vary in the long run, the focus is on the average cost of production, not the marginal cost. *Average cost* equals total cost divided by output. The firm's owner would like to know how the average cost of production varies as the size, or scale, of the firm increases. A firm's *long-run average cost* indicates the lowest average cost of producing each output when the firm's size is allowed to vary.

economies of scale
Forces that reduce a firm's average cost as the firm's size, or scale, increases in the long run

If the firm's long-run average cost declines as the firm size increases, this reflects **economies of scale**. Consider some reasons for economies of scale. *A larger-size firm often allows for larger, more specialized machines and greater specialization of labor.* Typically, as the scale of the firm increases, capital substitutes for labor. Production techniques such as the assembly line can be introduced only if the firm is sufficiently large.

Diseconomies of Scale

As the scale of the firm continues to increase, however, another force may eventually take hold. If the firm's long-run average cost increases as production increases, this reflects *diseconomies of scale*. As the amount and variety of resources employed increase, so does the *task of coordinating all these inputs*. As the workforce grows, additional layers of management are needed to monitor production. Information may not be correctly passed up or down the chain of command.

It is possible for long-run average cost to neither increase nor decrease with changes in firm size. If neither economies of scale nor diseconomies of scale occur as the scale of the firm expands, a firm experiences *constant returns to scale* over some range of production.

Long-Run Average Cost Curve

Figure 5.12 presents a firm's **long-run average cost curve**, showing the lowest average cost of producing each level of output. The curve is marked into segments reflecting economies of scale, constant returns to scale, and diseconomies of scale. Production must reach quantity *A* for the firm to achieve the *minimum efficient scale,* which is the smallest scale, or size, that allows the firm to take full advantage of economies of scale. At the minimum efficient scale, long-run average cost is at a minimum. From output *A* to output *B,* the firm experiences constant returns to scale. Beyond output rate *B,* diseconomies of scale increase long-run average cost.

Firms try to avoid diseconomies of scale. Competition weeds out firms that grow too large. To avoid diseconomies of scale, IBM divided into six smaller decision-making groups. Other large corporations have spun off parts of their operations to create new companies. HP started Agilent Technologies, and AT&T started Lucent Technologies.

The long-run average cost curve guides the firm toward the most efficient plant size for a given level of output. However, once a plant of that scale is built, the firm has fixed costs and is operating in the short run. A firm in the short run chooses the output rate where marginal revenue equals marginal cost. Firms plan for the long run, but they produce in the short run.

✓ CHECKPOINT

How are economies of scale and diseconomies of scale reflected in a firm's long-run average cost curve?

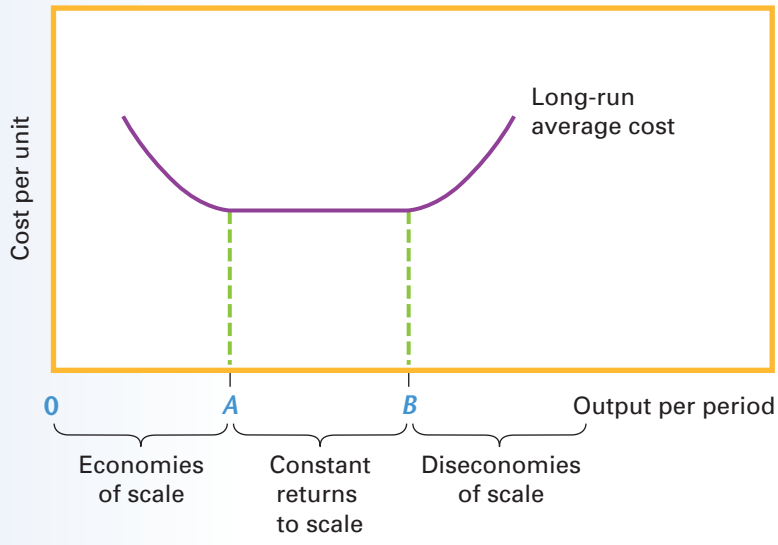
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A Firm's Long-Run Average Cost Curve

Figure 5.12

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Average cost declines until production reaches output level A. The firm is experiencing economies of scale. Output level A is the minimum efficient scale—the lowest rate of output at which the firm takes full advantage of economies of scale. Between A and B, the economy has constant returns to scale. Beyond output level B, the long-run average cost curve reflects diseconomies of scale.



ETHICS IN ACTION

Workers' Compensation

All across the nation, the cost of workers' compensation insurance has been spiking upward at a frightening rate. A seafood wholesaler in Los Angeles saw rates climb 68 percent in one year to almost $7,000 per employee. Most insurance costs have risen for companies in the past few years, but "workers' comp," as it is often called, is a major problem because firms have little control over cost increases. By law, companies must provide workers' compensation insurance, which pays for medical treatment for job-related injuries and for wages lost as a result of those injuries. Because every employee must have such insurance, the only way a company can reduce this cost is to eliminate employees or try to create a safer work environment so fewer workers are injured on the job. Increased insurance costs have caused both large and small companies to lay off workers, and—in many cases—it has forced them out of business. The main reasons for the sharp increases in workers' comp costs are soaring medical and legal costs, and fraud. Some workers may fake injuries or stay out of work longer than necessary. In some cases, unethical doctors, chiropractors, and lawyers work together to cheat the system. Companies also may manipulate their employee reports and downplay the dangers involved in the work that's being done in order to pay less than they should.

THINK CRITICALLY

What are the ethical issues involved with workers' compensation insurance? How does the increase in workers' compensation insurance affect a firm's long-run average cost curve?

Source: www.nytimes.com/2003/06/23/business/23COMP.html?th

Assessment 5.3

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Key Concepts

1. Tanya runs a computer repair business in a small room in her basement. Many people wanted her to fix their computers so she hired another worker, who doubled the number of computers she could fix each day. But when she hired a third worker, she found that the total number of computers she could service hardly changed at all. Explain how this demonstrates the law of diminishing returns.
2. Tanya has borrowed more than $10,000 to buy special equipment she needs in order to repair computers. Is the $750 she pays each month to repay her loan a fixed or a variable cost? Explain your answer.
3. Tanya pays her worker $15.00 per hour. If, on average, he can repair one computer in two hours, what is the marginal cost of fixing one more computer? What other information does she need to have before she can decide how much to charge her customers for computer repairs?
4. Tanya's monthly fixed costs total $1,000. She pays her assistant $2,500 each month. Tanya could take a job with a different business that would pay her $3,000 each month. Her total revenue from sales last month amounted to $6,000. Should she continue to operate the business or shut it down?

Graphing Exercise

5. Construct a graph of fixed cost, variable cost, and total cost, and then a second graph of marginal cost for Tony's Pizza, using the data in the table below. What other information does Tony need in order to determine how many pizzas he should produce per week? Explain your answer.

Weekly Cost Data for Tony's Pizza

Output	Fixed Cost	Variable Cost	Total Cost	Marginal Cost
0	$500	0	$ 500	- - -
10	$500	$1,000	$1,500	$100
20	$500	$1,500	$2,000	$ 50
30	$500	$1,800	$2,300	$ 30
40	$500	$2,100	$2,600	$ 30
50	$500	$2,600	$3,100	$ 50
60	$500	$3,600	$4,100	$100

Think Critically

6. **Entrepreneurship** You own a gasoline station. You have found that the cost of keeping your store open is $35 per hour for labor and power. Between midnight and 5:00 A.M., sales are not that great. On average, during this time you sell only 100 gallons of gasoline per hour. At the current price of $2.50 per gallon, your markup on gasoline is $.25 per gallon. Should you keep your business open all night?

CONNECT TO HISTORY



The Industrial Revolution in the United States: The Supply of Cotton

The increases in the production of cotton textiles in the late 1700s contributed to the Industrial Revolution. As production became more industrialized, suppliers of raw cotton were faced with heavy demand. In the United States, growing cotton was profitable only along a narrow strip along the coasts of Georgia and the Carolinas. These were the only locations Sea Island cotton could be grown. Another strain of cotton, which could be grown in the interior, was unprofitable because it produced too many seeds, which could be removed only by hand. It took a day's work to separate the seeds from the lint, making production too slow and too expensive to satisfy the demands of the industry.

Eli Whitney changed all this in 1793 with his invention of the cotton gin. Whitney's invention allowed one man to produce what it had previously taken 50 men, mostly slaves, to produce. Cotton now could be grown where it formerly had been cost prohibitive, enabling the American South to supply Great Britain's growing demand for raw cotton. Within two years, cotton exports from the United States to Great Britain rose from 487,000 pounds to 6,276,300. Because Great Britain's textile mills were demanding ever-increasing amounts of cotton, Southern planters were willing to move inland and devote more land and resources to producing cotton. The quantity of cotton supplied increased rapidly, keeping pace with the growing British cotton textile industry.

The British government, protective of its textile industry, passed laws preventing anyone with working knowledge of a textile mill from leaving the country. Despite that prohibition, an English textile mechanic, Samuel Slater, was attracted by a prize being offered for information about the English textile industry. He disguised himself as a farm laborer and came to the United States. Slater established a mill at Pawtucket, Rhode Island. Building machinery entirely from memory, he started the American textile industry in 1790. Still, American mills had difficulty competing with imports of cotton cloth from Britain and could afford only cheaper cotton imported from the West Indies. Southern states sold all of their cotton at a higher price to English mills.

THINK CRITICALLY

What variable cost did the invention of the cotton gin allow Southern cotton producers to lower? How were the growers able to create "economies of scale"? Why do you think the American cotton mills, using essentially the same equipment, had difficulty competing with the cotton cloth imported from Britain?



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5 Chapter Assessment

Summary

5.1 The Supply Curve

a Firms are motivated to supply products out of their desire to earn profit. *Supply* indicates how much of a good producers are willing and able to offer for sale per period at each possible price, other things constant. The *law of supply* states that the quantity supplied will be greater at a higher price than at a lower price, other things constant.

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b Businesses supply more as the price increases because they can shift resources from other products that now have relatively lower prices. Further, higher prices help producers cope with the higher marginal cost that results from increasing the quantity supplied. *Individual supply* is the relation between price and the quantity supplied by one firm in a market. *Market supply* is the relation between price and quantity supplied by all firms in a market.

c *Elasticity of supply* is the relationship between a percentage change in the price of a product and the resulting percentage change in the quantity supplied. Supply may be elastic, unit elastic, or inelastic. As a general rule, the more difficult and costly it is to increase the quantity supplied, the less elastic supply will be.

5.2 Shifts of the Supply Curve

a There are five determinants of supply that can shift the location of a supply curve. They are (1) changes in the cost of resources used to make the good, (2) changes in the price of other goods these resources could make, (3) changes in the technology used to make the good, (4) changes in the producers' expectations, and (5) changes in the number of sellers in the market.

b A change in the price of a product will cause movement along a supply curve. This is called a change in the quantity supplied. A change in a determinant of supply will cause the supply curve to move, or shift, to the left or right. This is called a change in supply.

5.3 Production and Cost

a The *short run* is a period during which at least one resource cannot be changed, or is fixed. Variable resources may be changed in the short run. In the *long run,* all resources are variable.

b The *marginal product* of an additional worker is the change in total production that results from employing that worker. As workers are added, a firm experiences first increasing returns and then diminishing returns.

c *Fixed cost* does not change with the amount produced. *Variable cost* is zero when output is zero and increases when output increases.

d *Marginal cost* is the change in total cost when the firm produces one more unit of output. *Marginal revenue* is the change in total revenue when the firm sells one more unit of output. Businesses will sell more output as long as the marginal revenue exceeds the marginal cost. In the short run, a firm's supply curve is that portion of its marginal cost curve rising above the minimum acceptable price.

e In the short run, a firm that is losing money will continue to produce as long as total revenue exceeds variable cost. A firm will shut down in the short run if variable cost exceeds total revenue.

f In the long run, firms face *economies* and *diseconomies of scale.* The *long-run average cost curve* first slopes downward as the size, or scale, of the firm expands, reflecting economies of scale. At some point the long-run average cost curve may flatten out, reflecting constant returns to scale. As the size of the firm increases, the long-run average cost curve may begin to slope upward, reflecting diseconomies of scale.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms will not be used.

_____ **1.** A period of time during which at least one of a firm's resources is fixed

_____ **2.** The change in total revenue from selling another unit of a product

_____ **3.** Any cost that does not change with the amount produced in the short run

_____ **4.** A period of time during which all of a firm's resources can be varied

_____ **5.** The change in total cost resulting from producing one more unit of output.

_____ **6.** Any production cost that changes as output changes

_____ **7.** A measure of the responsiveness of the quantity of a product supplied to a change in price

_____ **8.** The change in total product that results from an increase of one unit of resource input

_____ **9.** As more of a variable resource is added to a given amount of fixed resources, marginal product eventually declines and could become negative

_____**10.** Forces that reduce a firm's average cost as the firm's size grows

_____**11.** The total output of a firm

a. competitive firm's supply curve
b. economies of scale
c. elasticity of supply
d. fixed cost
e. law of diminishing returns
f. law of supply
g. long run
h. long-run average cost curve
i. marginal cost
j. marginal product
k. marginal revenue
l. short run
m. supply
n. supply curve
o. total cost
p. total product
q. variable cost

Review Economic Concepts

12. A shift of a product's *supply curve* will be caused by each of the following *except*

a. an increase in the cost of the resources used to produce the product.

b. an improvement in the technology used to produce the product.

c. an increase in consumer demand for the product.

d. a decrease in the price of other products that resources could be used to produce.

13. True or False If a product's *elasticity of supply* is 0.8, a 2 percent increase in price will cause a greater than 2 percent increase in the quantity supplied.

14. Typically, the longer the period of time allowed for firms to adjust to a price change, the __?__ a product's *supply curve* will be.

15. Which of the following events would cause the supply curve to shift to the left?

a. A firm's employees negotiate a 5 percent increase in their wages.

b. A firm's managers buy new, more efficient machinery for workers to use.

c. A firm provides its workers with training to better use their tools.

d. A firm finds a new, less expensive source of raw materials.

16. An increase in the price of a firm's product will cause __?__ the firm's supply curve.

17. **True or False** In the long run, all costs of production are variable.

18. An increase in the price of a product will cause __?__ the supply curve for that product.

19. If a firm experiences diminishing returns, it finds that
    a. there will be no increase in production when it hires another worker.
    b. the next worker hired will add less to production than the previous worker hired.
    c. it will earn no profit if it hires additional workers.
    d. it must lay off workers to earn a profit.

20. Which of the following is an example of a variable cost?
    a. the cost or wages for night security guards
    b. the cost of fire insurance for a firm's factory
    c. the cost of raw materials used to produce goods
    d. the cost of electricity to operate a security alarm.

21. In the short run, __?__ cost does not change as a firm produces additional output.

22. **True or False** When a firm experiences diminishing returns, its *marginal cost* of production decreases as output increases.

23. __?__ are forces that reduce a firm's average cost of production as the firm grows in size.

24. If a 1 percent change in price results in a 2 percent change in the quantity of the product that is supplied, the supply of that product is
    a. elastic.
    b. unit elastic.
    c. inelastic.
    d. none of the above.

25. A producer's __?__ is the change in its total revenue that results from selling one more unit of a product.

26. **True or False** The *law of supply* states that the quantity supplied will increase as the price of that product increases.

27. In the long run, a firm will
    a. experience economies of scale if its long-run average cost curve slopes up.
    b. experience diseconomies of scale if its long-run average cost curve slopes down.
    c. experience diseconomies of scale if its long-run average cost curve slopes up.
    d. experience constant returns to scale if its long-run average cost curve slopes up.

28. **True or False** On the left side of a firm's long run average cost curve, its average cost declines as production increases.

Apply Economic Concepts

29. A firm has the following marginal costs at different levels of production. If it is able to sell all the products it can produce at $5 each, how many will it produce? Explain your answer.

Unit	Marginal Cost Per Unit
100	$6
200	$4
300	$3
400	$4
500	$5
600	$6

30. The lowest long-run average cost for whatsits is $50 per unit. To take advantage of economies of scale and produce whatsits at this low cost, a firm would need to build a factory that could produce 5,000,000 whatsits per year. There are only 20,000 people who are willing to pay anything to buy a whatsit per year. Why won't a large whatsits factory be built?

31. Calculating Elasticity of Supply Complete the table below by calculating each missing elasticity of supply value. Is the supply elastic or inelastic?

Supply Elasticity of Bagels

Price per Dozen	Percentage Change	Quantity Supplied	Percentage Change	Elasticity	Elastic/Inelastic
$8	- - -	100	- - -	- - -	- - -
$7	12.5%	90	10.0%	_____	_____
$6	14.3%	80	11.1%	_____	_____
$5	16.6%	70	12.5%	_____	_____
$4	20.0%	60	14.3%	_____	_____
$3	25.0%	50	16.6%	_____	_____

32. Sharpen Your Skills: Cause and Effect During the summer of 2003, Americans were warned that shortages of natural gas could cause its price to increase by 50 percent or more during the following winter. Natural gas is a key ingredient in the production of artificial fertilizer. Much of the fertilizer used by U.S. farmers during the spring of 2004 was produced during the preceding winter. If the cost of producing this fertilizer increased as predicted, what would have happened to the location of the supply curve for agricultural products in 2004? Explain your answer.

33. Accounting Classify each of the following costs as variable or fixed. Explain your decision for each cost.

- The cost of a leased delivery truck
- The cost of a night security service
- The cost of delivering finished products
- The cost of fire insurance
- The cost of electricity used to run production machinery

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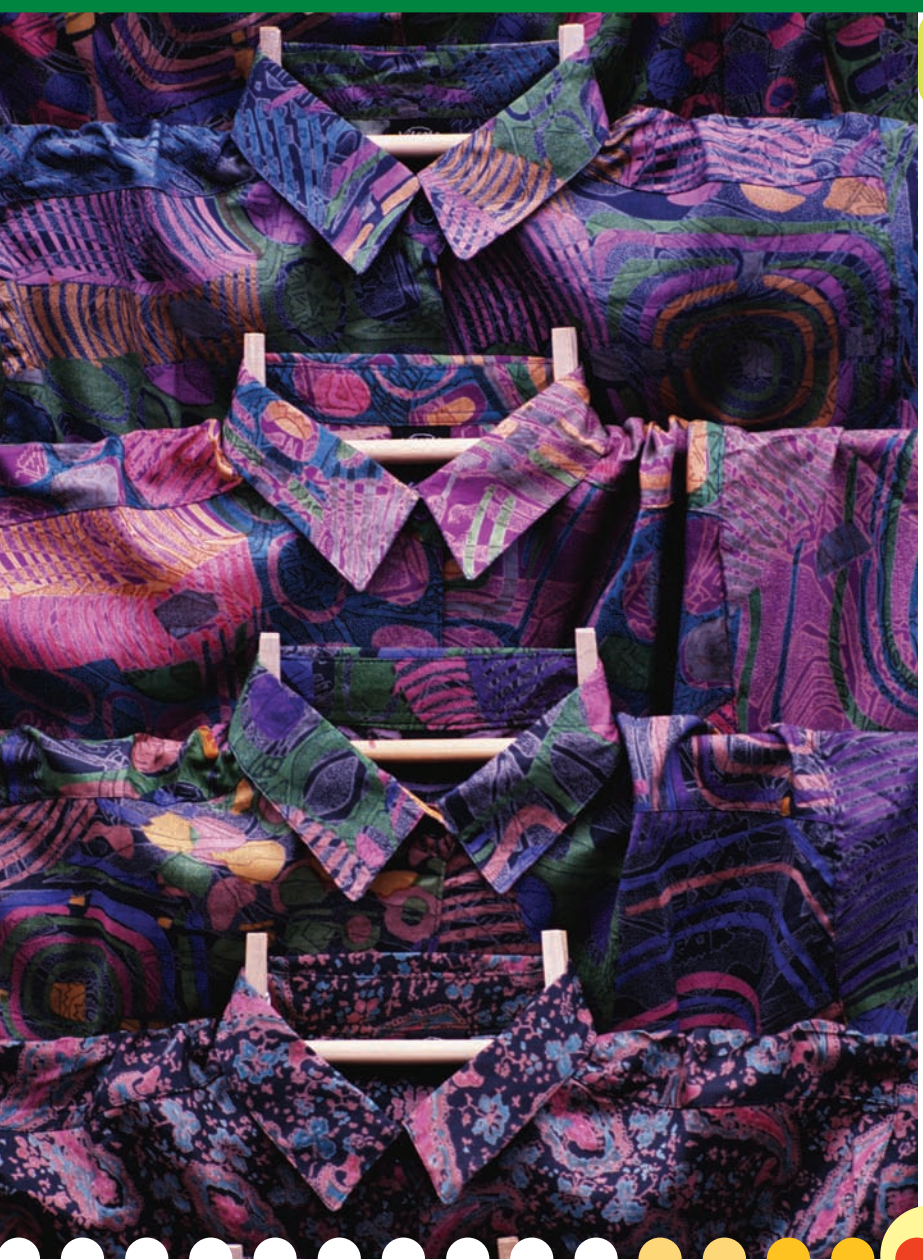
34. Access **EconData Online** at thomsonedu.com/school/econxtra. Read the article entitled "Labor Cost Per Unit of Output." Find the answers to the following questions from the article: (1) What is the relationship between labor productivity and worker's compensation insurance? (2) Why is labor cost an important indicator of trends in production costs? Write your answers in complete sentences on a sheet of paper.

6 Market Forces

6.1 Price, Quantity, and Market Equilibrium

6.2 Shifts of Demand and Supply Curves

6.3 Market Efficiency and the Gains from Exchange



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CONSIDER

How is market competition different from competition in sports and in games?

Why do car dealers usually locate together on the outskirts of town?

What's the difference between making stuff right and making the right stuff?

Why do government efforts to keep rents low usually lead to a housing shortage?

Why do consumers benefit nearly as much from a low price as from a zero price?

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6.1 Price, Quantity, and Market Equilibrium

Objectives

- Understand how markets reach equilibrium.
- Explain how markets reduce transaction costs.

Overview

Markets allow you to buy and sell for a price. Price is the amount you pay when you buy a good and the amount you receive when you sell it. As a buyer, or demander, you have a different view of the price than a seller, or supplier, does. That's because demanders pay the price and suppliers receive it. As the price rises, consumers reduce their quantity demanded along their demand curve, and producers increase their quantity supplied along their supply curve. How is this conflict between producers and consumers resolved? Market forces resolve the differences.

Key Terms

market equilibrium

surplus

shortage

transaction costs

In the News

Market Forces Lead Oil Companies to Unconventional Sources

In the 1970s when oil prices rose to record highs, oil companies began to look for sources of "unconventional oil," that is, oil that is more costly to produce than oil from conventional wells. However, when prices for oil dropped, the oil companies stopped many of these efforts. Now as the global demand for oil grows, particularly in developing countries such as India and China, the supply of "easy oil," or oil that is easy and cheap to recover and refine, is becoming scarce. The result is higher prices per barrel, which are reflected by higher prices at the gas pump. This has caused companies to again explore for sources of unconventional oil. With improved technology and higher prices, it may be profitable for the oil companies to invest in the vast reserves of Canada's oil sands and in the oil shale of Colorado, Utah, and Wyoming. Located far in northern Alberta, the oil sands give Canada the world's second-largest oil reserves. Oil shale could supply 25 percent of U.S. demand for 400 years. Another source of unconventional oil abounds in Pennsylvania—the waste coal or "culm" now sitting in piles covering 8,500 acres of that state. Ground was broken in eastern Pennsylvania in the summer of 2006 on the nation's first commercial plant for turning waste coal into diesel fuel.

THINK ABOUT IT

How has the invisible hand of market competition affected oil producers?

Source: Marianne Lavelle, "Oil Rush," *U.S. News and World Report,* April 24, 2006.

Investigate Your Local Economy

Go to a local shopping center. Look for evidence of specific goods that seem to be experiencing a surplus and those that seem to be experiencing a shortage. Make a list of at least four examples of each. Share your list of goods in class, and discuss the evidence that led you to choose each one.

Market Equilibrium

When the quantity that consumers are willing and able to buy equals the quantity that producers are willing and able to sell, that market reaches **market equilibrium**. In equilibrium, the independent plans of buyers and sellers exactly match, and there is no incentive for change. Therefore, market forces exert no further pressure to change price or quantity.

shortage
At a given price, the amount by which quantity demanded exceeds quantity supplied; a shortage usually forces the price up

market equilibrium
The quantity consumers are willing and able to buy equals the quantity producers are willing and able to sell

Surplus Forces the Price Down

To understand how a particular market reaches equilibrium, you need to consider demand *and* supply. Figure 6.1 shows the market for pizza, using schedules in panel (a) and curves in panel (b). What if the price initially is $12 per pizza? At that price, producers supply 24 million pizzas per week, but consumers demand only 14 million, resulting in an *excess quantity supplied,* or a **surplus**, of 10 million pizzas per week. This surplus means that suppliers are stuck with 10 million pizzas they can't sell at $12.

Suppliers' desire to eliminate the surplus puts downward pressure on the price. The arrow pointing down in the graph represents this pressure. As the price falls, producers reduce their quantity supplied and consumers increase their quantity demanded. As long as quantity supplied exceeds quantity demanded, the surplus forces the price lower.

surplus
At a given price, the amount by which quantity supplied exceeds quantity demanded; a surplus usually forces the price down

Shortage Forces the Price Up

What if the initial price is $6 per pizza? Figure 6.1 shows that at that price, consumers demand 26 million pizzas a week, but producers supply only 16 million. This results in an *excess quantity demanded,* or a **shortage**, of 10 million pizzas per week. Producers soon notice that the quantity supplied has sold out and the consumers unable to buy pizza for $6 are frustrated. Profit-maximizing producers and frustrated consumers create market pressure for a higher price. The arrow pointing up in the graph represents this pressure. As the price rises, producers increase their quantity supplied and consumers reduce their quantity demanded. The price continues to rise as long as quantity demanded exceeds quantity supplied.

Thus, *a surplus puts downward pressure on the price, and a shortage puts upward pressure.* As long as quantity demanded and quantity supplied differ, this difference forces a price change. Note that a shortage or a surplus is always measured at a particular price. There is no such thing as a general shortage or a general surplus.

Market Forces Lead to Equilibrium Price and Quantity

In Figure 6.1, the demand and supply curves intersect at the *equilibrium point,* identified as point *c*. The *equilibrium price,* which equates quantity demanded with quantity supplied, is $9 per pizza. The *equilibrium quantity* is 20 million per week. At that price and quantity, the market is said to *clear.* That's why the equilibrium price also is called the *market-clearing price.* Because there is no shortage and no surplus, there is no longer any pressure for the price to change. The equilibrium price will remain at $9 unless there is some change that shifts the demand or supply curve.

A market finds equilibrium through the independent and voluntary actions of thousands, or even millions, of buyers and sellers. In one sense, the market is personal because each consumer and each producer makes a personal decision regarding how much to buy or sell

at a given price. In another sense, the market is impersonal because it requires no conscious coordination among consumers or producers. *The independent decisions of many individual buyers and many individual sellers cause the price to reach equilibrium in competitive markets.*

✓ CHECKPOINT

How do markets reach equilibrium?

Market Exchange

Buyers and sellers have different attitudes about the price of a particular good. Markets help sort out those differences. Markets answer the questions of *what to produce, how to produce it,* and *for whom to produce it.*

Ask the Xpert!

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Why do some prices adjust more slowly?

Adam Smith's Invisible Hand

Market prices guide resources to their most productive uses and channel goods

The Graphing Workshop

Equilibrium in the Pizza Market — **Figure 6.1**

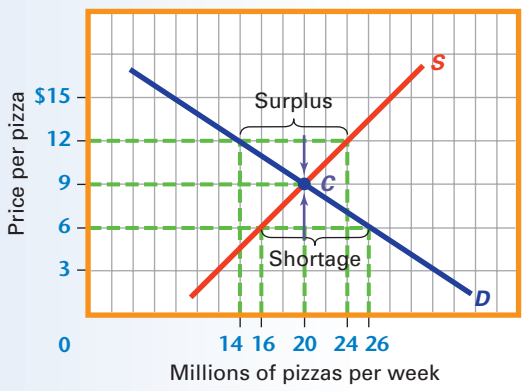
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(a) Market schedules

Millions of Pizzas per Week

Price per Pizza	Quantity Demanded	Quantity Supplied	Surplus or Shortage	Effect on Price
$15	8	28	Surplus of 20	Falls
12	14	24	Surplus of 10	Falls
9	20	20	Equilibrium	Remains the same
6	26	16	Shortage of 10	Rises
3	32	12	Shortage of 20	Rises

(b) Market curves



Market equilibrium occurs at the price at which the quantity demanded by consumers is equal to the quantity supplied by producers. This is shown at point c. At prices above the equilibrium price, the quantity supplied exceeds the quantity demanded. At these prices there is a surplus, which puts downward pressure on the price. At prices below equilibrium, quantity demanded exceeds quantity supplied. The resulting shortage puts upward pressure on the price.

e-conomics

THE ULTIMATE MARKETPLACE

Where can you offer for sale a grilled cheese sandwich with several bites taken out of it but allegedly containing an image of the Virgin Mary—and get $28,000 for it? What marketplace boasts nearly 150 million users in 30-plus countries? The answer to these questions comes in one simple term: eBay. The company was founded in 1995 by Pierre Omidyar and his wife so they could trade collectibles on the Net. The cost of selling something on eBay consists of a small listing fee and a percentage of the selling price. For example, an item with a $100 asking price would cost $2.40 to list with a written product description and a picture. If it sold for the $100, an additional cost of 5.25 percent of the first $25 of the selling price and 3 percent of the remaining $75 ($1.31 and $2.25 respectively) would be due. Total price for selling the good would be $5.96. By comparison, a three-line/three-day ad for a $100 collectible, sold or not, in a local newspaper would cost around $13. Ease of use, fraud protection, after-sale guarantees feedback on user integrity, and professional handling of payments have created a marketplace that, like the universe, is constantly expanding.

THINK CRITICALLY

Why do you think the cost of an eBay ad is so much lower than the cost of a newspaper print ad?

Sources: "eBay 101," about.com, March 2006; *Springfield News-Leader* Classified Ads, Conversation with Sales Agent, May 3, 2006.

to those consumers who value them the most. Market prices transmit information about relative scarcity and provide incentives to producers and consumers. Markets also distribute earnings among resource owners.

The coordination that occurs through markets takes place because of what Adam Smith called the invisible hand of market competition. No individual or small group coordinates market activities. Rather, it is the voluntary choices of many buyers and sellers responding only to their individual incentives. Although each individual pursues his or her own self-interest, the "invisible hand" of competition promotes the general welfare.

Market Exchange Is Voluntary

Your experience with competition probably comes from sports and games, where one side wins and the other loses. Market exchange is not like that. Market exchange is a voluntary activity in which both sides of the market expect to benefit and usually do. Neither buyers nor sellers would participate in the market unless they expected to be better off. A buyer values the product purchased at least as much as the money paid for it. A seller values the money received at least as much as the product sold.

For example, a consumer will pay $9 for a pizza only if he or she thinks the marginal benefit of that pizza will be worth at least $9. The pizza maker will supply a pizza for $9 only if he or she thinks its marginal cost will be no more than $9. Again, voluntary exchange usually makes both sides better off.

Market prices serve as signals to buyers and sellers about the relative scarcity of the good. A higher price encourages consumers to find substitutes for the good or even go without it. A higher price also encourages producers to allocate more resources to the production of this good and fewer resources to the production of other goods.

In short, prices help people recognize market opportunities to make better choices as consumers and as producers. The beneficial effects of market exchange include trade between people or organizations in different parts of the country, and among people and organizations in different countries.

Markets Reduce Transaction Costs

A market sorts out the conflicting views of price between demanders and suppliers. Markets reduce **transaction costs**, or the costs of time and information needed to carry out market exchange. The higher the transaction cost, the less likely the exchange will take place. For example, the car business needs land so car dealers locate on the outskirts of town, where land is cheaper. Dealers tend to locate near each other so they will be at hand when buyers look for cars. In this way, car dealers reduce the transaction costs of car shopping. Thus, *markets reduce transaction costs.*

✓ CHECKPOINT

How do markets reduce transaction costs?

transaction costs

The costs of time and information needed to carry out market exchange

Assessment 6.1

Key Concepts

1. How would the owner of a dress shop react if she found she had 30 extra prom dresses that she could not sell at the current price?
2. How would the owners of a nursery react if hundreds of customers wanted to buy yucca plants at the current price of $15 when they have only 25 plants to sell?
3. How is it possible for both you and the owner of a fast-food restaurant to benefit when you choose to buy a hamburger for $2.00?
4. What are the transaction costs involved in shopping for shoes at your local mall?

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Graphing Exercise

5. Draw a graph of the demand and supply for running shoes from the data in the demand and supply schedule. What is the equilibrium price? What would happen to the price and quantity demanded and supplied if the current price was $60?

Demand and Supply Schedule for Running Shoes

Price	Quantity Demanded	Quantity Supplied
$70	40	100
$60	50	80
$50	60	60
$40	70	40
$30	80	20

Think Critically

6. **Science** Scientists have created tomatoes through genetic engineering that are resistant to many diseases. Over time this has caused the equilibrium price of tomatoes to fall. Explain why this has happened.

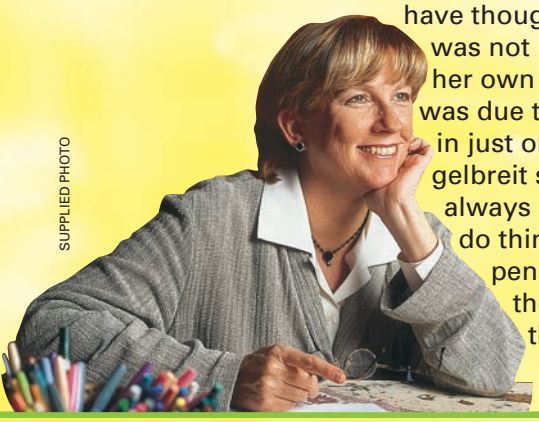
movers + shakers

Mary Engelbreit *Artist and Entrepreneur*

When Mary Engelbreit was 11 years old, she moved into her first art studio—a closet in her home in St. Louis, Missouri. After high school graduation, she went to work in an art supply store and then in a small advertising agency. She accepted freelance art projects, held independent showings of her work, and for a short time worked as an editorial cartoonist for the *St. Louis Post-Dispatch*. Although she learned a lot, Engelbreit felt she did her best work when it came from her imagination.

In 1977, newly married and with encouragement from her husband, she took her portfolio to New York City and called on some well-known publishing houses. One New York art director suggested she try greeting cards. "I was kind of crushed," she recalls, but then she saw how suitable the suggestion might be. Engelbreit's open-mindedness toward new possibilities became one of the keys to her success.

She sold her first three greeting-card designs for $150. But she didn't like depending on the whims of the card companies. So in 1983 Engelbreit began her own greeting-card company. While some may have thought the timing was not right to start her own company—she was due to have a baby in just one month—Engelbreit said, "There's always a reason not to do things; it's too expensive, or it's not the best time, or this, or that; but I believe there are always wonderful opportunities sailing by, and you have to be ready to grab them."



SUPPLIED PHOTO

Engelbreit has been grabbing opportunities ever since. In just a few years, her greeting cards blossomed into a million dollar business. Most of Engelbreit's products are sold through specialty stores and major retailers, as well as through online stores, including her own, which opened in July 2003. Today she heads three companies:

- Mary Engelbreit Studios develops licensed products—including greeting cards, books, calendars, gifts, frames, dinnerware, and fabrics—sold by thousands of retailers throughout the United States and in many foreign countries.
- The Mary Engelbreit Store in St. Louis, Missouri, carries more than 1,000 products, including the exclusive ME products that are available only in her store.
- *Mary Engelbreit's Home Companion* magazine has a readership of more than two million and covers topics including family life, food, home décor, crafts, gardening, and collectibles.

In 2000, she was named by *Giftware Business* magazine as the second best-selling licensed property (a close second to Winnie the Pooh). In 2001 and 2003, the International Licensing Industry Merchandisers' Association honored Mary Engelbreit with the prestigious Best Art License of the Year award. She was nominated for this same award in 2005.

SOURCE READING

Mary Engelbreit was not thrilled with the idea of illustrating greeting cards. After some thought, however, she reconsidered. What were some of the market forces that would have helped Mary determine the price of her greeting cards and the quantity she should produce?

ENTREPRENEURS IN ACTION

In small groups, discuss the similarities in the markets for Mary Engelbreit's three companies. Think of one or more companies that Engelbreit might consider starting, based on these similarities.

Sources: www.maryengelbreit.com; article on Small Business Administration web site at http://sbm.sbmin.com/asp/DisplayArticles.asp?ArticleId_827&CatID=78

6.2 Shifts of Demand and Supply Curves

Objectives

- Explain how a shift of the demand curve affects equilibrium price and quantity.
- Explain how a shift of the supply curve affects equilibrium price and quantity.
- Explain what happens to equilibrium price and quantity if both curves shift.

Overview

When a market reaches equilibrium, the quantity demanded equals the quantity supplied. The equilibrium price and quantity will persist until one of the determinants of demand or supply changes. This section examines how a change in any one of these determinants will shift the demand curve or the supply curve, and in the process change equilibrium price and quantity. The adjustment to a new equilibrium is usually swift. At times, however, often because of government intervention, markets fail to achieve equilibrium.

Key Terms

increase in demand

decrease in demand

increase in supply

decrease in supply

In the News

The Mystery of Air Fares, Part I

"The law of supply and demand works overtime in the airline industry." — Terry Tripper of Cheapseats.com.

To set air fares, the airlines use a system developed in the 1970s based on how full the plane is when the ticket is purchased. By using sophisticated computer programs that track ticket sales, an airline may vary the price day-to-day or even hour-to-hour as flights are booked. The computers set expectations so that if a flight books quickly the airline will convert some cheaper seats to more expensive ones. For flights that book more slowly, the opposite will happen. Some high-priced seats are reserved for business travelers who decide late to fly and are willing to pay higher prices. Then at the last minute, the airlines often cut prices for any unsold seats, because additional passengers cost the airlines little. The result is that on any given flight the price for a seat may be hundreds of dollars higher or lower than the one next to it.

THINK ABOUT IT

In which direction does the supply curve for airline tickets shift as you get closer to departure? A last-minute drop in price reflects a shift of which curve and in which direction?

Sources: Dan Fitzpatrick, "Unlocking Mystery Behind Air Fares," *Pittsburgh Post-Gazette,* October 16, 2005; Anne Miller, "Supply, Demand, Luck Affect Prices," *Pittsburgh Post-Gazette,* August 31, 2003.

The Graphing Workshop

Shifts of the Demand Curve

increase in demand
Consumers are more willing and able to buy the product at every price

In Figure 6.2, demand curve D and supply curve S intersect at the equilibrium price of $9 and the equilibrium quantity of 20 million 12-inch pizzas per week. What happens to equilibrium price and quantity if the demand curve shifts? A shift of the demand curve means that quantity demanded changes at each price.

What Could Shift the Demand Curve?

If one of the factors that determine the demand for pizza changes in a way that increases demand, this would shift the demand curve to the right from D to D'. Any of the following could shift the demand for pizza rightward:

1. An increase in the money income of consumers (because pizza is a normal good)
2. An increase in the price of a substitute, such as tacos, or a decrease in the price of a complement, such as beverages
3. A change in expectations that encourages consumers to buy more pizza now
4. A growth in the number of pizza consumers
5. A change in consumer tastes in favor of pizza

An Increase in Demand

Any one of those five changes could increase the demand for pizza. An **increase in demand** means that consumers are now more willing and able to buy the product at every price. Note that none of these changes will shift the supply curve.

After the demand curve shifts rightward to D' in Figure 6.2, the amount demanded at the initial price of $9 increases to 30 million pizzas. Because producers supply only 20 million pizzas at that price, there is a shortage of 10 million pizzas. Many consumers are frustrated because they can't find pizza at that price. Producers realize that they could charge more for pizza. This shortage puts upward pressure on the price.

As price increases, quantity demanded decreases along the new demand curve, D', and quantity supplied increases along the existing supply curve, S, until the two quantities are once again equal. The new equilibrium price is $12, and the new equilibrium quantity is 24 million pizzas per week.

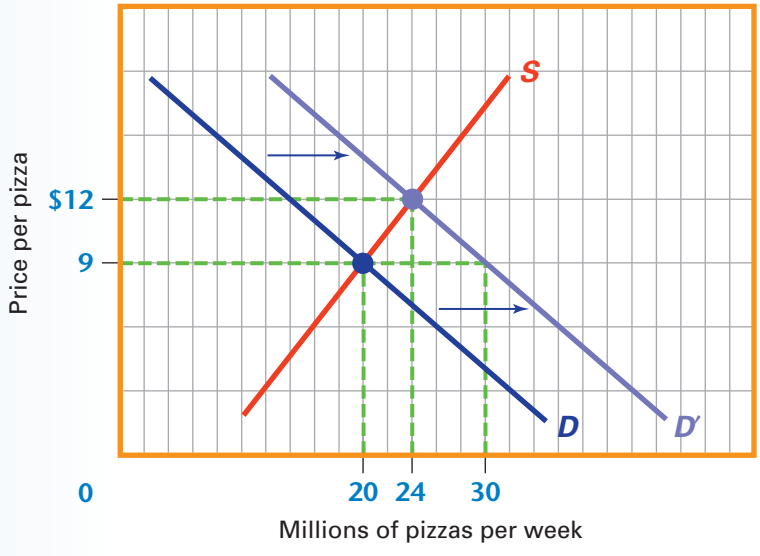
Main Idea

Effects of an Increase in Demand

Figure 6.2

Role of Prices in a Market System

Prices send signals and provide incentives to buyers. When demand changes, market prices adjust, affecting buyers' incentives. After an increase in demand shifts the demand curve from D to D′, quantity demanded exceeds quantity supplied at the initial price of $9 per pizza. As the price rises, quantity supplied increases along supply curve S, and quantity demanded decreases along demand curve D′. When the new equilibrium price of $12 is reached, the quantity demanded once again equals the quantity supplied. Both price and quantity are higher following the increase in demand.



As long as the supply curve slopes upward, a rightward shift of the demand curve increases both price and quantity.

A Decrease in Demand

What if one of the determinants of demand changed in a way that reduced demand—such as a decrease in consumer income, a decrease in the price of a substitute, or a reduction in the number of consumers? This results in a **decrease in demand**, and consumers are now less willing and able to buy the product, pizza, at every price.

The effect of a decrease in demand is shown in Figure 6.3. The demand for pizza shifts leftward from D to D''. The amount demanded at the initial price of $9 is now 10 million pizzas. Because producers supply 20 million at that price, there is a surplus of 10 million pizzas. To eliminate the surplus, the price must fall. Thus, this surplus puts downward pressure on the price.

As the price falls, quantity demanded increases along the new demand curve D'' and quantity supplied decreases along the existing supply curve S until the two quantities are equal once again. The new equilibrium price is $6, and the new equilibrium quantity is 16 million pizzas per week. *As long as the supply curve slopes upward, a leftward shift of the demand curve reduces both price and quantity.*

Summary of Demand Shifts

Given an upward-sloping supply curve, a rightward shift of the demand curve increases both price and quantity and a leftward shift of the demand curve decreases both price and quantity. One way to remember this is to picture the demand curve shifting along an upward-sloping supply curve. If the demand curve shifts rightward, price and quantity increase. If the demand curve shifts leftward, price and quantity decrease.

decrease in demand

Consumers are less willing and able to buy the product at every price

✓ CHECKPOINT

How does a shift of the demand curve affect equilibrium price and quantity?

Shifts of the Supply Curve

What happens to equilibrium price and quantity when there is a shift of the

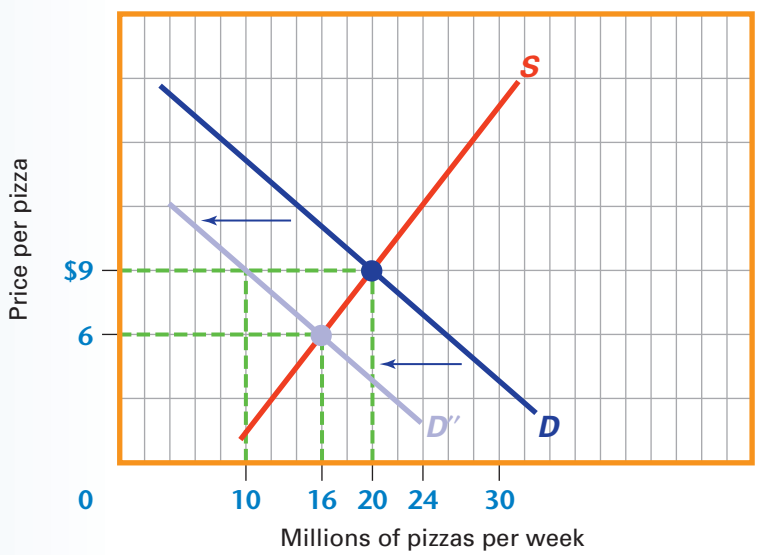
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Effects of a Decrease in Demand

Figure 6.3

thomsonedu.com/school/econxtra

After a decrease in demand shifts the demand curve from D to D″, quantity supplied exceeds quantity demanded at the initial price of $9 per pizza. As the price falls, quantity supplied decreases along supply curve S, and quantity demanded increases along demand curve D″. When the new equilibrium price of $6 is reached, the quantity demanded once again equals the quantity supplied. Both price and quantity are lower following the decrease in demand.



supply curve? A shift of the supply curve means that quantity supplied changes at each price. In Figure 6.4, demand curve *D* and supply curve *S* intersect to yield the initial equilibrium price of $9 and the initial equilibrium quantity of 20 million 12-inch pizzas per week.



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What would happen to the supply curve for pizza in your area if many of the pizza restaurants invested in a new type of pizza oven?

What Could Shift the Supply Curve?

If one of the factors that determine supply changes in a way that increases supply, this would shift the supply curve to the right from *S* to *S′*. Any of the following could shift the pizza supply curve rightward:

1. A reduction in the cost of a resource used to make pizza, such as mozzarella cheese
2. A decline in the price of another good these resources could make, such as Italian bread
3. A technological breakthrough in pizza ovens
4. A change in expectations that encourages pizza makers to expand production
5. An increase in the number of pizzerias

An Increase In Supply

Any of the above changes will shift the supply curve, but none will shift the demand curve. An **increase in supply** means that producers are more willing and able to supply pizza at every price. After the supply curve shifts rightward to *S′* in Figure 6.4, the amount supplied at the initial price of $9 increases from 20 million to

increase in supply
Producers are more willing and able to supply the product at every price

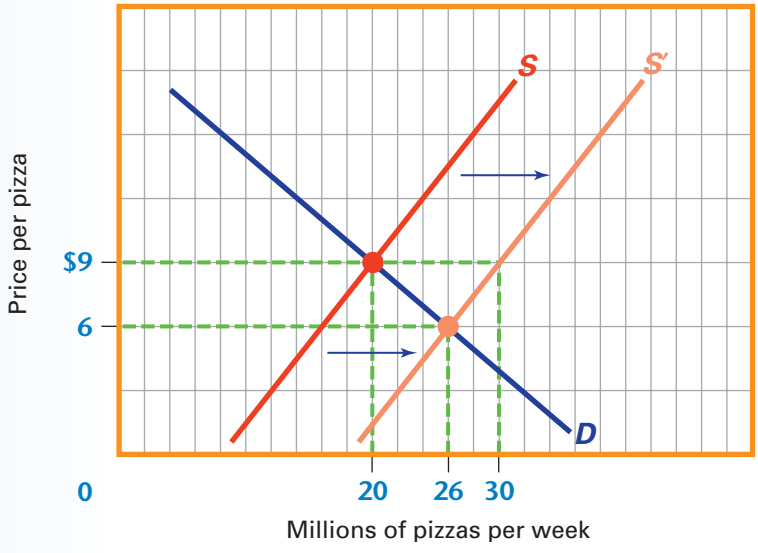
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Effects of an Increase in Supply

Figure 6.4

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An increase in supply is depicted as a rightward shift of the supply curve, from S to S′. At the new equilibrium point, quantity is greater and price is lower than before the increase in supply.



30 million. Producers supply 10 million more pizzas than consumers demand. The build up of unsold pizzas frustrates producers stuck with pizzas they can't sell for $9 each. This surplus forces the price down.

As the price falls, quantity supplied declines along the new supply curve and quantity demanded increases along the existing demand curve until a new equilibrium point is reached. The new equilibrium price is $6, and the new equilibrium quantity is 26 million pizzas per week. *As long as the demand curve slopes downward, a rightward shift of the supply curve reduces price but increases quantity.*

A Decrease In Supply

What if one of the determinants of supply changed in a way that reduced supply—such as an increase in the cost of a resource used to make pizza, an increase in the price of another good these resources could make, or a decrease in the number of pizzerias?

A **decrease in supply** means that producers are less willing and able to supply pizza at every price. After the supply curve shifts leftward to S'' in Figure 6.5, the amount supplied at the initial price of $9 decreases from 20 million to 10 million. Producers supply 10 million fewer pizzas than consumers demand. This shortage forces the price up.

As the price rises quantity supplied increases along the new supply curve and quantity demanded decreases along the existing demand curve until a new equilibrium point is reached. The new equilibrium price is $12, and the new equilibrium quantity is 14 million pizzas per week. *As long as the demand curve slopes downward, a leftward shift of the supply curve increases price but reduces quantity.*

Summary of Supply Shifts

Thus, *given a downward-sloping demand curve, a rightward shift of the supply curve decreases price but increases quantity, and a leftward shift of the supply curve increases price but decreases quantity.* Picture the supply curve shifting along a downward-sloping demand curve. If the supply curve shifts rightward, price decreases but quantity increases. If supply shifts leftward, price increases but quantity decreases.

✓ CHECKPOINT

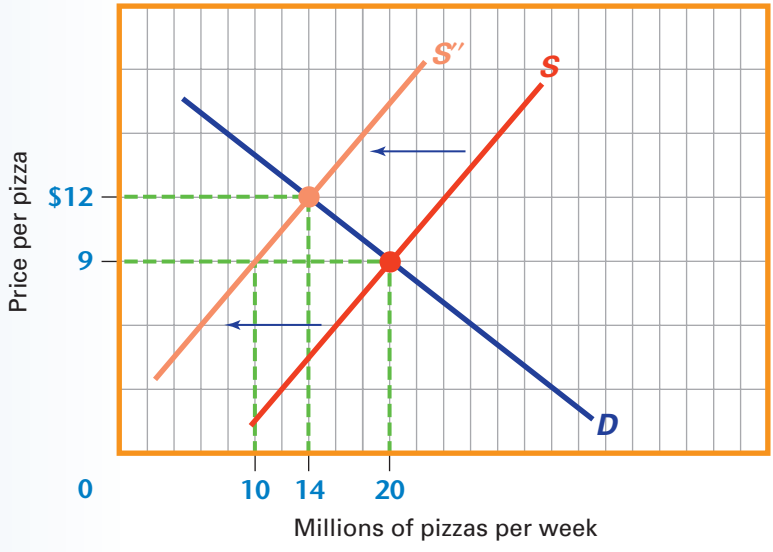
How does a shift of the supply curve affect equilibrium price and quantity?

decrease in supply

Producers are less willing and able to supply the product at every price

Effects of a Decrease in Supply — **Figure 6.5**

A decrease in supply is depicted as a leftward shift of the supply curve, from S to S″. At the new equilibrium point, quantity is lower and price is higher than before the decrease in supply.



ETHICS IN ACTION

Face the Music

The music business always has been fiercely competitive, with frequent unethical attempts to manipulate supply and demand and to control prices. Back in the 1960s, music companies fiddled with demand using an unethical practice that came to be known as "payola." Distributors would give under-the-table payoffs, or bribes, to radio disc jockeys to play certain recordings and not play others. The music industry recently forced a successful copyright violation prosecution of Napster, a pioneer of free music-swapping online. Shortly after, however, the industry may have overplayed its hand in a move reminiscent of the original "payola" scandal. Steve Jobs, CEO of Apple, accused the music-label owners of being "greedy" for wanting to raise digital download prices for legitimate downloads to Apple's iPod. Consequently, the U.S. Department of Justice launched an official inquiry into allegations that the various music labels conspired to fix the wholesale prices charged to legitimate music retailers. The Apple CEO suggested that the price increases fostered by the collusive efforts of the record labels may force iPod owners to turn to the very online piracy that cost the music industry billions in the past.

THINK CRITICALLY

The music industry is not alone in its attempts to manipulate supply, demand, and prices. Can you think of how other industries might apply similar unethical or illegal practices?

Source: Rhys Blakely, "U.S. Probes Online Music Market," The Times Online, March 3, 2006; The Associated Press, "Price of Recordings Fixed, Judge Rules," June 28, 2002, www.nytimes.com.

Both Curves Shift

As long as only one curve shifts, you can determine what will happen to equilibrium price and quantity. If both curves shift, the outcome is less certain.

If Curves Shift in the Same Direction

If both demand and supply increase, buyers are more willing and able to demand the good at every price and sellers are more willing and able to

Main Idea

Markets—Price and Quantity Determination

The housing market exists when people who want to purchase a home interact with people who have a house for sale. How are prices in the housing market determined? If the demand for housing increases more than the supply, what happens to the price and quantity of homes on the market?



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supply it at every price. All you can say for sure is that equilibrium quantity will increase. What happens to price depends on which curve shifts more.

If demand increases more than supply, equilibrium price will increase. For example, between 1995 and 2005, the demand for housing increased more than the supply, so both price and quantity increased.

If supply increases more than demand, equilibrium price will decrease. For example, in the last decade, the supply of personal computers has increased more than the demand, so price has decreased and quantity has increased.

Conversely, if both demand and supply decrease, this means that buyers are less willing and able to demand the good and sellers are less willing and able to supply it. So equilibrium quantity decreases. But again, you cannot determine what will happen to equilibrium price unless you examine the relative shifts. If demand decreases more than supply, the price will fall. If supply decreases more, the price will rise.

If Curves Shift in Opposite Directions

If demand and supply shift in opposite directions, you can determine what will happen to equilibrium price. Equilibrium price will increase if demand increases and supply decreases. Equilibrium price will decrease if demand decreases and supply increases. Without knowledge of particular shifts, however, you cannot say what will happen to equilibrium quantity.

Figure 6.6 summarizes the four possible combinations of changes. Keep in mind that demand curves shift due to factors that determine demand, and supply curves shift due to factors that determine supply.

✓ CHECKPOINT

What happens to equilibrium price and quantity if both curves shift in the same direction?

Effects of Changes in Both Supply and Demand — **Figure 6.6**

When the supply and demand curves shift in the same direction, equilibrium quantity also moves in that direction. The effect on equilibrium price depends on which curve shifts more. If the curves shift in opposite directions, equilibrium price will move in the same direction as demand. The effect on equilibrium quantity depends on which curve shifts more.

Change in Supply	Change in Demand: Demand increases	Change in Demand: Demand decreases
Supply increases	Equilibrium price change is indeterminate. Equilibrium quantity increases.	Equilibrium price falls. Equilibrium quantity change is indeterminate.
Supply decreases	Equilibrium price rises. Equilibrium quantity change is indeterminate.	Equilibrium price change is indeterminate. Equilibrium quantity decreases.

Sharpen Your Skills

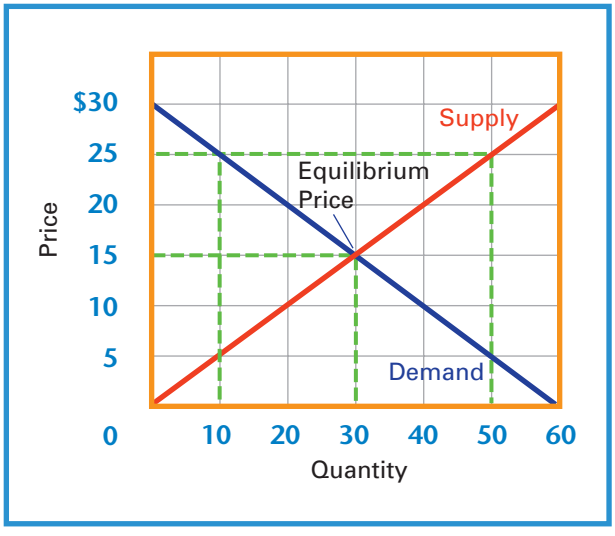


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Analyze Visuals

The demand, supply, and equilibrium price for a product are unlikely to stay the same over long periods of time. Economists often demonstrate changes on graphs of demand and supply with arrows. Horizontal arrows that point to the right (→) indicate an increase in either demand or supply that shifts a curve to the right. Horizontal arrows that point to the left (←) indicate a decrease in either demand or supply that shifts a curve to the left. When the demand or supply curve for a product shifts, there will be a shortage or surplus of the product. When there is a surplus of a product, the producer will have an incentive to lower the price to a new equilibrium price. This change often is demonstrated on a graph of demand and supply with a vertical arrow that points down (↓). When there is a shortage of a product, the producer will have an incentive to increase the price to a new equilibrium price. This change often is demonstrated on a graph of demand and supply with a vertical arrow that points up (↑).

Demand and Supply for Disposable Cameras



Apply Your Skill

Consider the graph of demand and supply for disposable cameras to the left. Redraw the graph to show what would happen as a result of each of the following events. Use arrows to show the shift of demand or supply, the resulting shortage or surplus, and the change in the price that would eliminate these amounts. Explain what you have done in each case. Draw a different diagram for each of the four cases.

1. Travel increases during the summer months. This leads many more people to take vacation photographs.
2. There is an increase in the cost of film that causes the cost of producing a disposable camera to grow by 10 percent.
3. A new type of digital camera is marketed that is inexpensive and takes excellent photographs. Many people who used to buy disposable cameras choose to purchase these new digital cameras instead.
4. A new process is invented that allows the producer to assemble disposable cameras with half as many workers. This causes the firm to be willing to offer more cameras for sale at each possible price.

Assessment 6.2

Key Concepts

1. What would happen to a student's demand curve for movie tickets if she lost her after-school job?
2. What would happen to a student's demand curve for movie tickets if the price of DVD movie rentals increased by $4.00 each?
3. What would happen to the equilibrium price and demand curve for New York Yankee baseball caps if the Yankees had just won the World Series?
4. What would happen to the equilibrium price and location of a bakery's supply curve for loaves of bread if it agreed to give its workers a 10 percent raise in pay?
5. What would happen to the locations of a bowling alley's demand and supply curves if the Social Security rate of taxation was increased from 7.65 percent to 9.0 percent for both workers and employers? What would happen to the equilibrium price per game of bowling?

Xtra! Study tools

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Graphing Exercise

6. Suppose that running becomes much more popular. As a result, consumers are willing to purchase 30 more pairs of running shoes at each possible price. The demand and supply schedule below shows this increase in demand. Draw a graph showing this shift of demand and the unchanged supply for running shoes. What is the new equilibrium price? Explain why the equilibrium price changed from $50.

Demand and Supply Schedule for Running Shoes

Price	Quantity Demanded		Quantity Supplied
	Old	New	
$70	40	70	100
$60	50	80	80
$50	60	90	60
$40	70	100	40
$30	80	110	20

Think Critically

7. **Advertising** Find an advertisement for a well-known brand of candy. Explain what the firm is trying to do to the location of the demand curve for its product. If the firm is successful, what will probably happen to its revenue?
8. **History** During 1974, there was a war in the Middle East that caused many petroleum-exporting nations to stop shipping oil to the United States. Explain what this did to the location of the supply curve and price of gasoline in the United States.

6.3 Market Efficiency and the Gains from Exchange

Objectives

- Distinguish between productive efficiency and allocative efficiency.
- Explain what happens when government imposes price floors and price ceilings.
- Identify the benefits that consumers get from market exchange.

Overview

Demand and supply are the foundations of a market economy. Although a market usually involves the interaction of many buyers and sellers, few markets are consciously designed. Just as the law of gravity works whether or not you understand Newton's principles, market forces operate whether or not buyers and sellers understand the laws of demand and supply. Market forces arise naturally, much the way car dealers gather together on the city's outskirts, or the way dozens of different fruits and vegetables from all over the world find their way to the produce section of your local grocer.

Key Terms

productive efficiency

allocative efficiency

disequilibrium

price floor

price ceiling

consumer surplus

In the News

The Mystery of Air Fares, Part II

With the aid of the Internet, travelers are increasingly becoming their own booking agent. What they find, however, is a system that can seem confusing and frustrating. For the airlines, "It's all about managing inventory and supply and demand," according to Julie King of Continental Airlines. For years the airlines have tried to differentiate between customers who are price sensitive and those who are less price sensitive. With that in mind, the airlines have invested in computer systems that look ahead nearly a year to analyze the bookings on their own and their competitor's flights. Fare updates are received three times a day as millions of fares are adjusted. Business travelers traditionally have been less price sensitive than leisure travelers. They generally have been willing and able to pay more per ticket, especially for last-minute travel. However, businesspeople increasingly are finding substitutes for air travel. Rather than paying higher airline prices, they are turning toward alternatives such as trains, automobiles, or teleconferencing. Some are even booking flights farther in advance to take advantage of the cheaper flights enjoyed by many leisure travelers. Recently discount airlines have captured a larger share of the market. By offering cheaper but fewer fares and placing a cap on the highest fare, the discounters have forced other larger airlines to follow suit by capping fares and cutting business prices.

THINK ABOUT IT

What is the impact of airline ticket price caps if the price is below the equilibrium price? What is the impact if the price is above the equilibrium price? When do you think each of these might happen?

Sources: Dan Fitzpatrick, "Unlocking Mystery Behind Air Fares," *Pittsburgh Post-Gazette,* October 16, 2005; Anne Miller, "Supply, Demand, Luck Affect Prices," *Pittsburgh Post-Gazette,* August 31, 2003.

Competition and Efficiency

How do competitive markets stack up in terms of efficiency? To judge market performance, economists employ two measures of efficiency. The first, called *productive efficiency,* refers to producing output at the lowest possible cost. The second, called *allocative efficiency,* refers to producing the output that consumers value the most. Market competition promotes both productive efficiency and allocative efficiency.

Productive Efficiency: Making Stuff Right

Productive efficiency occurs when a firm produces at the lowest possible cost per unit. The firms that survive and thrive in a competitive market are those that supply the product at the lowest cost. *Competition ensures that firms produce at the lowest possible cost per unit.* Firms that are not efficient must either shape up or leave the industry.

Allocative Efficiency: Making the Right Stuff

Producing at the lowest possible cost per unit is no guarantee that firms are producing what consumers most prefer. This situation is like the airline pilot who announces to passengers that there's some good news and some bad news: "The good news is that we're making record time. The bad news is that we're lost!" Likewise, firms may be producing efficiently but producing the wrong goods—that is, making stuff right but making the wrong stuff.

Allocative efficiency occurs when firms produce the output that is most valued by consumers. How do economists know that market competition guarantees allocative efficiency? The answer lies with the market demand and supply curves. The demand curve reflects the marginal benefit that consumers attach to each unit of the good, so the market price is the amount of money people are willing and able to pay for the final unit they purchase.

You also know that the equilibrium price equals the marginal cost of supplying the final unit sold. Marginal cost measures the opportunity cost of resources employed by the firm to produce that final unit sold. Thus the supply curve reflects the opportunity cost of producing the good.

The supply and demand curves intersect at the combination of price and quantity at which *the marginal benefit that consumers attach to the final unit purchased just equals the marginal cost of the resources employed to produce that unit.*

As long as marginal benefit equals marginal cost, that last unit purchased is worth as much as, or more than, any other good that could have been produced using those same resources. There is no way to reallocate resources to increase the total value of output to

productive efficiency

Occurs when a firm produces at the lowest possible cost per unit

allocative efficiency

Occurs when a firm produces the output most valued by consumers



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Competition in the music business encourages record companies to supply the types of music that consumers want to hear. What type of efficiency does this statement suggest?

NETBookmark

The *minimum wage* is a price floor in the market for labor. The government sets a minimum price per hour of labor in certain markets, and no employer is permitted to pay a wage lower than that. Access the Department of Labor web site through thomsonedu.com/school/econxtra to learn more about the mechanics of the program. Then use a supply and demand graph to illustrate the effect of a minimum wage above equilibrium on a particular labor market. What happens to quantity demanded and quantity supplied as a result?

thomsonedu.com/school/econxtra

price floor
A minimum legal price below which a product cannot be sold

price ceiling
A maximum legal selling price above which a product cannot be sold

disequilibrium
A mismatch between quantity demanded and quantity supplied as the market seeks equilibrium; usually temporary, except where government intervenes to set the price

society. Thus, there is no way to reallocate resources to increase the total benefit consumers reap from production.

When the marginal benefit that consumers derive from a good equals the marginal cost of producing that good, that market is said to be allocatively efficient. Competition among sellers encourages producers to supply more of what consumers value the most. Firms not only are making stuff right, they are also making the right stuff.

✓ CHECKPOINT

Distinguish between productive efficiency and allocative efficiency.

Disequilibrium

One way to appreciate markets is to examine instances when they are slow to adjust or where they are not free to work. A surplus of goods exerts downward pressure on price, and a shortage of goods exerts upward pressure. But markets do not always reach equilibrium quickly. During the time required to adjust, the market is said to be in disequilibrium. **Disequilibrium** is usually a temporary condition when the plans of buyers do not match the plans of sellers. Sometimes, usually as a result of government intervention in markets, disequilibrium can last a while, even years.

Price Floor

At times public officials set the price above its equilibrium level. For example, the federal government often regulates the prices of agricultural products in an attempt to ensure farmers a higher and more stable income than they would earn otherwise. To achieve higher prices, the federal government establishes a price floor for a product, such as a gallon of milk, making it illegal to sell below the floor price. A **price floor** is a *minimum* legal price. To have an impact, the price floor must be set above the equilibrium price.

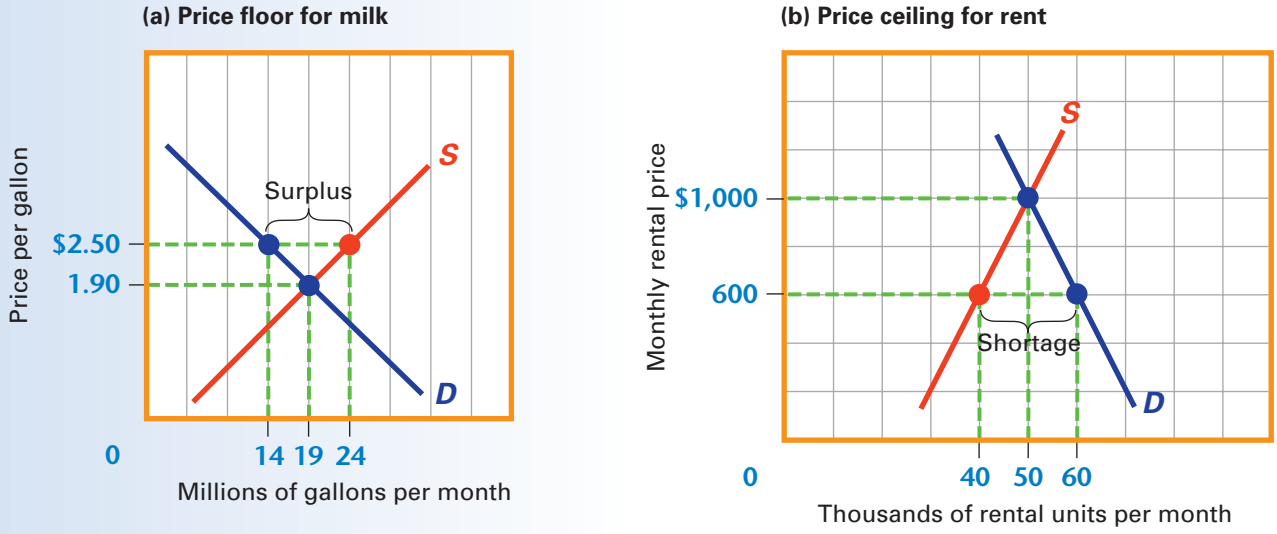
Panel (a) of Figure 6.7 shows the effect of a $2.50 per gallon price floor for milk. At that price, farmers supply 24 million gallons per week, but consumers demand only 14 million gallons. Thus, the price floor results in a surplus of 10 million gallons. This surplus milk will accumulate on store shelves and eventually sour. So, as part of the price-support program, the government usually agrees to buy up the surplus milk to take it off the market. The federal government, in fact, has spent billions buying and storing surplus agricultural products.

Price Ceiling

Sometimes public officials try to keep prices below their equilibrium levels by establishing a **price ceiling**, or a *maximum* legal price. For example, concern about the rising cost of rental housing in some U.S. cities prompted public officials to impose rent ceilings, making it illegal to charge more than the ceiling price. Panel (b) of Figure 6.7 represents the demand and supply for rental housing in a hypothetical city. The vertical axis shows the monthly rent, and the horizontal axis shows the quantity of rental units. The equilibrium, or market-clearing, rent is $1,000 per month. The equilibrium quantity is 50,000 housing units.

Suppose government officials are concerned that rents of $1,000 per month are not affordable to enough households. They pass a law setting a maximum legal rent of $600 per month. At that ceiling price, 60,000 rental units

Effects of a Price Floor and a Price Ceiling **Figure 6.7**



If a price floor is established above the equilibrium price, a permanent surplus results. A price floor established at or below the equilibrium price has no effect. If a price ceiling is established below the equilibrium price, a permanent shortage results. A price ceiling established at or above the equilibrium price has no effect.

are demanded, but only 40,000 are supplied, resulting in a housing shortage of 20,000 units. Thus, the price ceiling creates a housing shortage.

Because of the price ceiling, the rental price no longer allocates housing to those who value it the most. Other devices must emerge to ration housing, such as waiting lists, personal connections, and the willingness to make under-the-table payments, such as "key fees," "finder's fees," high security deposits, and the like.

To have an impact, a price floor must be set above the equilibrium price, and a price ceiling must be set below the equilibrium price. A floor price above the equilibrium price creates a surplus, and a ceiling price below the equilibrium price creates a shortage. Various nonprice devices must emerge to cope with the disequilibrium resulting from the market interference.

Price controls distort market prices and interfere with the market's ability to allocate resources efficiently. Prices no longer provide consumers and producers accurate information about the relative scarcity of goods. The good intentions of government officials create shortages and surpluses that often are economically wasteful.

Other Sources of Disequilibrium

Government intervention in the market is not the only source of disequilibrium. Sometimes, when new products are introduced or when demand or supply changes suddenly, the market takes a while to adjust. For example, popular toys, best-selling books, and chart-busting CDs often sell out and are temporarily unavailable while suppliers produce more. In these cases, there are temporary shortages.

On the other hand, some new products attract few customers and pile up unsold on store shelves, awaiting a "clearance sale." In these cases, there are temporary surpluses.

✓ CHECKPOINT

What happens when governments impose price floors and price ceilings?

Consumer Surplus

In equilibrium, the marginal benefit of pizza just equals its marginal cost. The cost to the economy of bringing that final pizza onto the market just equals the marginal benefit that consumers get from that pizza. Does this mean that consumers get no net benefit from the good? No. Market exchange usually benefits both consumers and producers.

consumer surplus
The difference between the most that consumers are willing and able to pay for a given quantity of a good and what they actually pay



In small groups, discuss the pros and cons of "clearance sales" with regard to consumers and suppliers. Who wins? Who loses? What impact do you think these sales have on the prices of other goods the store sells?

Market Demand and Consumer Surplus

A demand curve shows the marginal benefit consumers attach to each unit of the good. For example, based on the demand curve for pizza presented earlier, consumers demand 8 million pizzas at a price of $15. Apparently, those consumers believe the marginal benefit of a pizza is worth at least $15. Consumers demand 14 million pizzas at a price of $12. At a price of $9, consumers demand 20 million pizzas, even though some are willing to pay $15 each for 8 million pizzas and $12 each for 14 million pizzas.

Consumers enjoy a consumer surplus because they get to buy all 20 million pizzas for $9 each even though some are willing to pay more for lesser amounts. **Consumer surplus** is the difference between the most that consumers would be willing and able to pay for a given quantity and the amount they actually do pay.

To get a clearer idea of consumer surplus, refer to the demand curve in Figure 6.8. If the price is $2 per unit, each person adjusts his or her quantity demanded until the marginal benefit of the final unit he or she purchases equals at least $2. Each consumer gets to buy all other units for $2 each as well. The dark-shaded area bounded above by the demand curve and below by the price of $2 depicts the consumer surplus when the price is $2.

The lighter-shaded area shows the increase in consumer surplus if the price drops to $1. If this good were free, the consumer surplus would be the entire

Span the Globe

Oil for One and One for Oil

The Organization of Petroleum Exporting Countries (OPEC) is an 11-member, international group that works to control the output and price of oil. OPEC pumps about a third of the world's crude oil. Its production policies can have a major effect on the price consumers pay to drive their cars and heat their homes. Representatives of the 11 countries meet periodically and agree to increase or decrease the number of barrels of crude oil they supply to maintain the price levels they want. If the price drops, OPEC cuts back production (lowers the ceiling). If the price rises, OPEC increases its oil output. OPEC has no control over the demand for oil. However, by using its control over supply, OPEC's goal is to artificially create an equilibrium and maintain the price of oil at the level it wants.

THINK CRITICALLY

What are some safeguards the United States could employ to keep OPEC from raising petroleum prices unreasonably in the future?

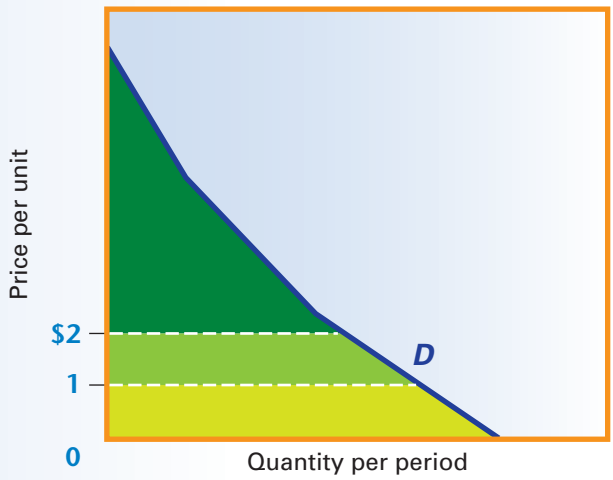
The Graphing Workshop

Market Demand and Consumer Surplus

Figure 6.8

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Consumer surplus at a price of $2 is shown by the darker area. If the price falls to $1, consumer surplus increases to include the lighter area between $1 and $2. If the good is free, consumer surplus would increase by the lightest area under the demand curve.



area under the demand curve. Notice that at a price of zero, the consumer surplus is not that much greater than when the price is $1. Competitive markets maximize the amount of consumer surplus in the economy.

An Application of Consumer Surplus: Free Medical Care

Certain Americans, such as the elderly and those receiving public assistance, are provided government-subsidized medical care. Taxpayers spent more than $450 billion in 2005 providing medical care to 80 million Medicare and Medicaid recipients, for an average annual cost of more than $5,600 per beneficiary. The dollar cost to most beneficiaries was usually little or nothing. The problem with giving something away is that beneficiaries consume it to the point where their marginal benefit from the final unit is zero. However, the marginal cost to taxpayers can be substantial.

This is not to say that beneficiaries derive no benefit from free medical care. Although they may not value the final unit consumed all that much, most derive a large consumer surplus from the other units they consume. For example, suppose that Figure 6.8 represents the demand for medical care by Medicaid beneficiaries. Because the dollar price to them is zero, they consume medical care up to the point where the demand curve intersects the horizontal axis. Their consumer surplus is the entire area under the demand curve.

The cost to taxpayers of providing that final unit of medical care may be $100 or more. One way to reduce the cost to taxpayers of such programs without really harming beneficiaries is to charge a small price—say, $1 per physician visit. Beneficiaries would eliminate visits they value less than $1. This would yield significant savings to taxpayers but would still leave beneficiaries with good health care and a substantial consumer surplus. This is measured in Figure 6.8 as the area under the demand curve but above the $1 price.

Medical care, like other goods and services, is also sensitive to a time price. For example, a 10 percent increase in the average travel time required to visit a free outpatient clinic reduced visits by 10 percent.

These findings do not mean that certain groups shouldn't receive low-cost medical care. The point is that when something is provided for free, people consume it until their marginal benefit is zero. Even a modest money cost or time cost would reduce program costs yet still leave beneficiaries with a substantial consumer surplus.

✓ CHECKPOINT

How do consumers benefit from market exchange?

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Key Concepts

1. How does market competition ensure that consumers will be offered a selection of low-priced foods?
2. How does market competition ensure that a new type of camera you want to own will eventually be available for you to purchase?
3. If the minimum wage were increased to $20 per hour, how many of your classmates do you believe would look for a job? How many jobs do you expect they would find? How is this an example of a price floor?
4. If the government set a price ceiling of $5 per month to subscribe to an Internet Service Provider (ISP), what would happen to the number of ISPs that offer Internet access and the number of people who wished to purchase their service?
5. Suppose you buy a salad for lunch every day for $2.75. This is the most you would be willing to pay for your salad. One week there is a special on salads and the price is reduced to $2.00. What is the value of the consumer surplus you will receive if you buy five salads during that week?

Graphing Exercise

6. Suppose the government became concerned about the high price of running shoes and imposed a price ceiling of $40 per pair. Given the demand and supply schedules at the right, what would the results of such a regulation be? Why would many consumers and producers be upset with this result? Draw a graph that demonstrates the result of such a regulation.

Demand and Supply Schedule for Running Shoes

Price	Quantity Demanded	Quantity Supplied
$70	40	100
$60	50	80
$50	60	60
$40*	70	40
$30	80	20

*government price ceiling

Think Critically

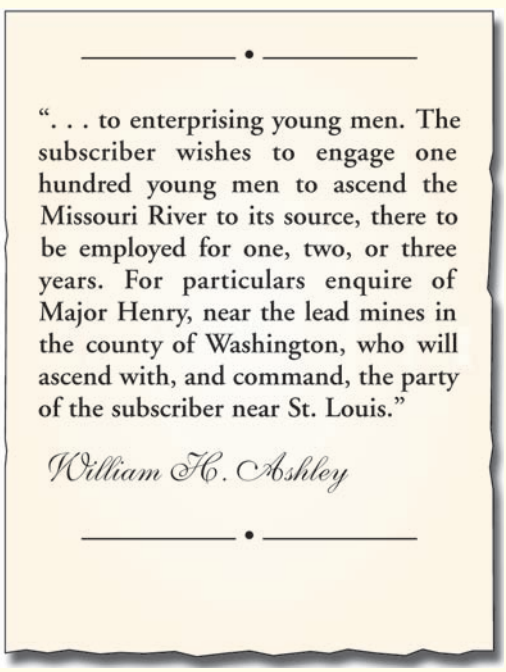
7. **History** In the early 1900s, many businesses produced horse-drawn wagons at very low cost. Still, many of these firms were forced out of business due to a lack of consumer demand. Many people chose to purchase automobiles instead of wagons. Explain how this fact demonstrates the importance of allocative efficiency.

CONNECT TO HISTORY



The Rocky Mountain Fur Company

On March 20, 1823, an ad appeared in the *Missouri Republican:*



". . . to enterprising young men. The subscriber wishes to engage one hundred young men to ascend the Missouri River to its source, there to be employed for one, two, or three years. For particulars enquire of Major Henry, near the lead mines in the county of Washington, who will ascend with, and command, the party of the subscriber near St. Louis."

William H. Ashley

This call for young men began the era of the Mountain Men and the fur trade in the American Far West. To the north, the French and the British had long established a profitable fur trade in North America, but Americans did not reach the Far West until after the Lewis and Clark expedition. The trade was driven by the demand of the markets in the eastern United States and Europe for furs, but the Napoleonic Wars and the War of 1812 closed many of these markets. Following the peace, the demand once again rose in the United States and Europe.

With the establishment of trading posts, most furs were obtained by trading with the Native Americans. Some were obtained by company-employed hunters and trappers. The average take was 120 beaver skins a season. A third method was by purchasing them from independent hunters and trappers. Ashley and Henry's company, the Rocky Mountain Fur Company, cut costs by taking an innovative approach that would send groups of trappers into the wilderness. Each would trade or trap furs and then would meet at the end of the season at a predetermined location, where a rendezvous was held. At the rendezvous, the Mountain Men would sell their furs and obtain more supplies for the next season. This method allowed the company to cut costs by avoiding the building and maintaining of expensive trading posts.

THINK CRITICALLY

Using supply and demand curves, demonstrate the following situations:

1. The effects of the end of the War of 1812 on the market for fur
2. The effects of depletion of fur supplies
3. The effect of the substitute of silk for fur in men's hats

Sources: Ann M. Carlos, *The North American Fur Trade, 1804–1821: A Study in the Life-Cycle of a Duopoly,* New York: Garland Publishing, Inc., 1986; Hiram Martin Chittenden, *American Fur Trade of the Far West,* Vols. 1 & 2, University of Nebraska Press, 1987; Victor R. Fuchs, *The Economics of the Fur Industry,* New York: Columbia University Press, 1957; Jon E. Lewis, *The Mammoth Book of the West,* New York: Carrol & Graf Publishers, Inc., 1996; *Oxford History of the American West,* Clyde A. Milner, Carol A. O'Connor, Martha A. Sandweiss, eds., New York: Oxford University Press, 1994.

6 Chapter Assessment

6.1 Price, Quantity, and Market Equilibrium

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a In a competitive market, the forces of demand and supply push the price to its *equilibrium* level, where the quantity demanded and supplied are equal.

b Any price above the equilibrium level will cause a *surplus,* which will force the price down to its equilibrium level. Any price below the equilibrium level will cause a *shortage,* which will increase the price to its equilibrium level.

c In competitive markets, buyers and sellers are free to exchange goods or services for money voluntarily. When there is a voluntary exchange, both parties usually gain because of the different values they place on goods, services, or money.

d *Transaction costs* are costs that are necessary to carry out market exchanges. Markets encourage exchanges by reducing transaction costs. Similar businesses often choose to locate in the same area to reduce the transaction costs of shopping.

6.2 Shifts of Demand and Supply Curves

a Changes in any one of five factors can shift the demand curve for a product. These are (1) changes in consumer money income, (2) changes in the price of substitute or complementary products, (3) changes in consumer expectations, (4) changes in consumer population, and (5) changes in consumer tastes.

b Changes in any one of five factors can shift the supply curve for a product. These are (1) changes in the cost of a resource used to make the product, (2) changes in the price of other goods that these resources could be used to produce, (3) changes in technology that reduce the cost of making the product, (4) changes in producer expectations, and (5) changes in the number of producers.

c A shift in either the demand or supply curve will change the equilibrium price and the quantity of the product.

6.3 Market Efficency and the Gains from Exchange

a Competitive markets exhibit productive and allocative efficiency. *Productive efficiency* occurs when products are manufactured at the lowest possible cost. *Allocative efficiency* occurs when firms produce the products that are most valued by consumers.

b *Disequilibrium* occurs when the quantity of a product consumers demand is not equal to the quantity producers supply. Disequilibrium is usually a temporary condition, but can continue over time, particularly when government intervenes in the market. Government-imposed *price floors* are likely to result in surpluses of a product, while government-imposed *price ceilings* usually cause shortages. Government interventions undermine the role of prices in allocating products to those who value them the most. Because the price system is not allowed to function, some other mechanism must emerge to deal with the resulting surpluses or shortages.

c *Consumer surplus* is the difference between the most that consumers would have been willing to pay for a product and what they actually pay for it. Competitive markets typically maximize consumer surplus.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The quantity of a product demanded is not equal to the quantity supplied

_____ **2.** Quantity demanded equals quantity supplied and the market clears

_____ **3.** A situation achieved when a firm produces output most desired by consumers

_____ **4.** A minimum legal price below which a product cannot be sold

_____ **5.** The amount of a product that cannot be sold at a given price

_____ **6.** Consumers are more willing and able to buy a product at every price

_____ **7.** A maximum legal price above which a product cannot be sold

_____ **8.** A situation achieved when a firm produces output at the lowest possible cost

_____ **9.** The amount by which the quantity demanded exceeds the quantity supplied at a particular price

_____**10.** The cost of time and information needed to carry out market exchange

_____**11.** Producers are less willing and able to supply a product at every price

a. allocative efficiency
b. consumer surplus
c. decrease in demand
d. decrease in supply
e. disequilibrium
f. increase in demand
g. increase in supply
h. market equilibrium
i. price ceiling
j. price floor
k. productive efficiency
l. shortage
m. surplus
n. transaction costs

Review Economic Concepts

12. True or False A price below a product's *equilibrium* price will result in a surplus of the product.

13. When there is a voluntary exchange, it is reasonable to believe that

a. both the buyer and seller gained.

b. neither buyer nor seller gained.

c. the buyer gained more than the seller.

d. the seller gained more than the buyer.

14. True or False A market is always in a state of equilibrium.

15. True or False A price ceiling has an impact only if ceiling price is set above its equilibrium level.

16. Given an upward-sloping supply curve, a rightward shift of the demand curve

a. decreases both equilibrium price and quantity.

b. increases both equilibrium price and quantity.

c. decreases equilibrium price only.

d. increases equilibrium price only.

17. True or False A shift of the supply curve results from a change in quantity demanded at all prices.

18. A market will stay in equilibrium until
    a. one of the factors that determines demand changes.
    b. one of the factors that determines supply changes.
    c. all the suppliers go out of business.
    d. both a and b

19. __?__ are the costs of time and information required to carry out market exchange.

20. Each of the following will cause the demand for butter to increase *except*
    a. an increase in the price of margarine.
    b. a scientific study that shows butter is good for people's health.
    c. an increase in the number of people who are unemployed.
    d. an increase in the number of people who might purchase butter.

21. **True or False** An increase in a firms' costs of production will cause the supply curve to shift to the left.

22. Each of the following will cause supply to increase *except*
    a. workers are trained to be more efficient.
    b. a new, lower-cost source of electric power is found.
    c. firms invest in new technology that reduce their costs of production.
    d. a number of experienced workers retire and are replaced by new workers.

23. **True or False** If firms' costs of production fall while the demand for their product grows, you can be sure the equilibrium price for the product will fall.

24. There is __?__ when a firm produces products at the lowest possible cost.

25. Suppose the current equilibrium price for natural gas is $1.05 per thousand cubic feet. The government decides to impose a price ceiling of $.90. This will cause
    a. the quantity demanded to decrease and the quantity supplied to decrease.
    b. the quantity demanded to decrease and the quantity supplied to increase.
    c. the quantity demanded to increase and the quantity supplied to decrease.
    d. the quantity demanded to increase and the quantity supplied to increase.

26. __?__ is the difference between the total amount consumers would be willing and able to pay for a product and what they actually had to pay.

Apply Economic Concepts

27. **Equilibrium** On a separate sheet of paper, complete the table below:

Demand and Supply Schedule for Tacos

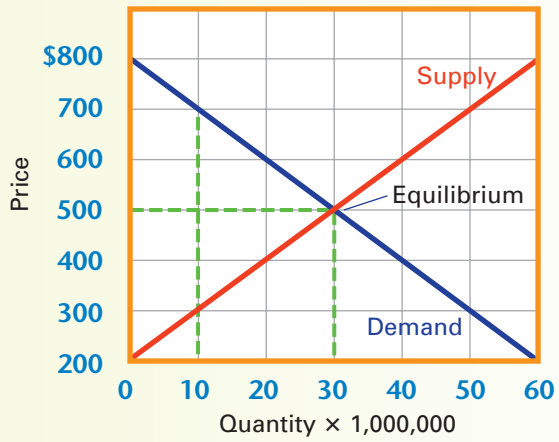
Price Per Taco	Quantity Demanded	Quantity Supplied	Surplus/ Shortage	Will the price rise or fall?
$2.00	25	175	_____	_____
$1.75	50	150	_____	_____
$1.50	75	125	_____	_____
$1.25	100	100	_____	_____
$1.00	125	75	_____	_____
$0.75	150	50	_____	_____

28. **Graphing Demand and Supply** Construct a graph of the demand and supply for tacos from the data provided in the table in exercise 27.

29. **Graphing Shifts in Demand and Supply** On your graph, draw and label the shifts of demand and supply curves for tacos that would result from each of the following events.
    a. The cost of corn meal increases 50 percent.
    b. The price of pizza goes down 25 percent.
    c. The number of people who like tacos increases by 30 percent.
    d. A new machine is invented that makes tacos automatically.

30. **Sharpen Your Skills: Analyze Supply and Demand Graphs** Between 2000 and June of 2003, the unemployment rate in the United States rose from 4.0 percent to 6.4 percent. This 2.4 percent increase added more than 3.6 million workers to the ranks of the unemployed in this country. People who are out of work may receive unemployment compensation payments from the government. These payments, however, replace only a portion of the income they had been earning. After unemployed people pay for food, clothing, and shelter for their families, they often have little left over to purchase other goods or services. Increased unemployment in the United States between 2000 and June of 2003 contributed to a decline in demand for many household appliances. Sketch a graph similar to the one to the right to show what happened to the demand and supply for refrigerators in these years. Place arrows on your graph to show the shifts of demand, the surplus of products, and change in the equilibrium price. Label the changes that took place and explain what happened.

Demand and Supply for Home Refrigerators, 2000



31. **Make Predictions** Predict how the equilibrium price of coffee would be affected by the following changes:
    a. Poor growing conditions for coffee beans (demand remains constant)
    b. A major advertising campaign in the United States by a group of the world's coffee growers (supply remains constant)
    c. The publication of a new medical study warning against coffee consumption in excess of one cup per week (supply remains constant)
    d. Trade prohibition against a country in South America that produces a significant share of the U.S. coffee supply (demand remains constant)

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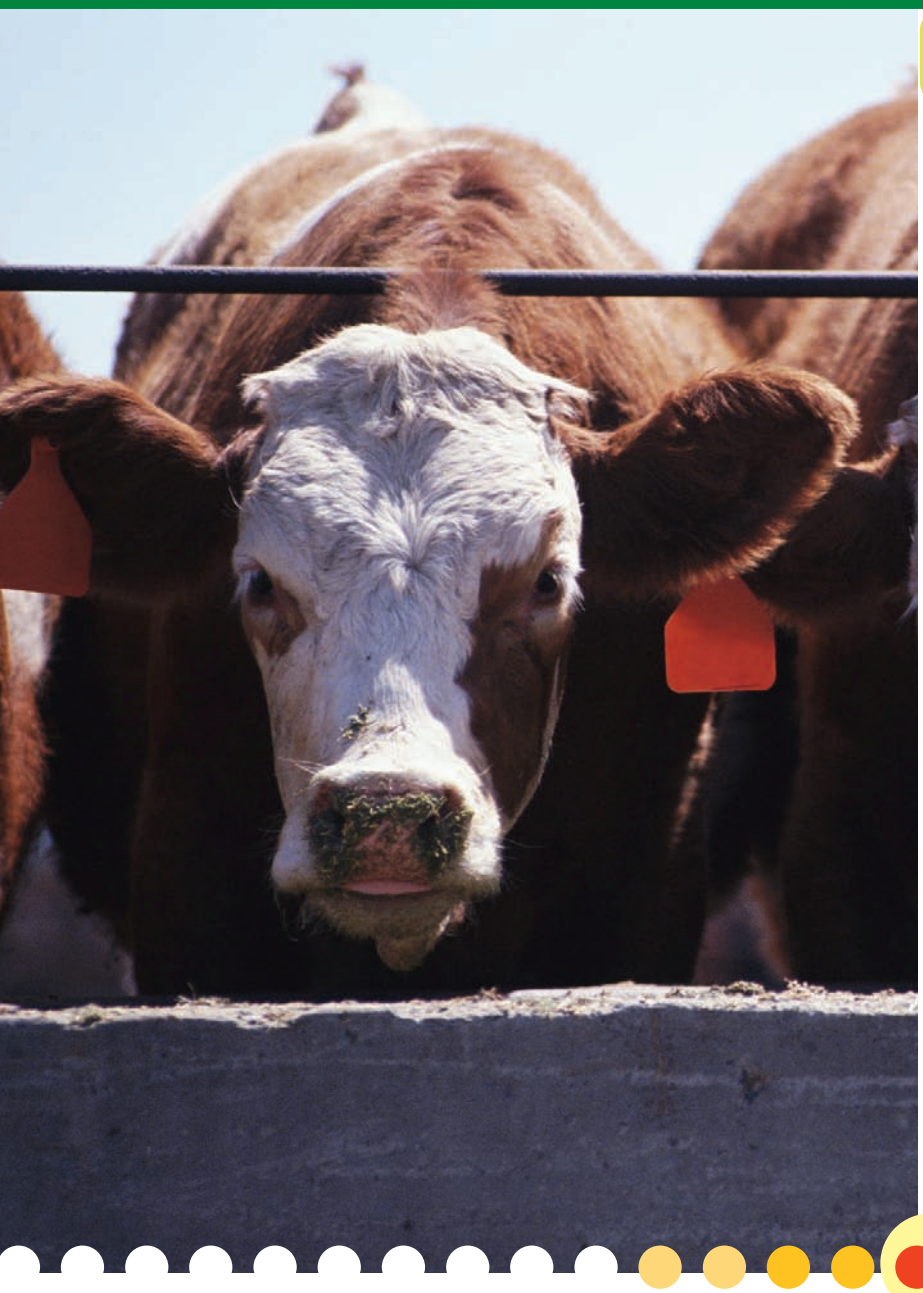
32. Access **EconNews Online** at thomsonedu.com/school/econxtra. Click on "Supply and Demand" under "Economic Fundamentals." Read the article entitled "If the Feds Won't Increase the Minimum Wage, Some States Will." Then draw a graph showing the impact of the imposition of a minimum wage, indicating the presence of unemployment with the price floor.

7 Market Structure

7.1 Perfect Competition and Monopoly

7.2 Monopolistic Competition and Oligopoly

7.3 Antitrust, Economic Regulation, and Competition



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CONSIDER

What does a share of Microsoft stock have in common with one head of cattle?

What's so perfect about perfect competition?

Why don't most monopolies last?

Why are some panty hose sold in egg-shaped cartons?

Why was OPEC created?

Is the U.S. economy more competitive now than it used to be?

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7.1 Perfect Competition and Monopoly

Objectives

- Distinguish the features of perfect competition.
- Describe the barriers to entry that can create a monopoly.
- Compare the market structures of monopoly and perfect competition in terms of price and quantity.

Overview

Market structure describes the important features of a market, including the number of buyers and sellers, the product's uniformity across suppliers, the ease of entry into the market, and the forms of competition among firms. All firms that supply output to a particular market—such as the market for cars, shoes, or wheat—are referred to as an *industry*. Therefore, the terms *industry* and *market* are used interchangeably. The first two market structures you will examine are perfect competition and monopoly.

Key Terms

market structure
perfect competition
commodity
monopoly
market power
barriers to entry

In the News

Is a Diamond Forever?

Ever since the Great Depression caused a slump in diamond prices, De Beers Consolidated Mines has tried to control the world supply of uncut diamonds. The company owns the world's largest diamond mine, which was discovered in 1866 on a farm in South Africa owned by Johannes De Beers. Sometimes called "The Syndicate," De Beers limits the supply of rough diamonds that reaches the market. It does so by inviting about one hundred wholesalers to London and offering each a box of uncut diamonds for a set price. In this way De Beers can restrict the supply of diamonds of a certain size and quality, which will result in a higher price for those diamonds. Diamonds are not especially rare, either in nature or jewelry stores. Jewelers are willing to hold large inventories because they are confident that De Beers will keep prices up. The company slogan, "A diamond is forever" is aimed at promoting the sentimental value of diamonds. With it De Beers hopes to keep secondhand diamonds off the market, where they could otherwise increase supply and drive down the price. Recently the company has lost control of some rough diamond supplies. In fact, the company's share of the world's uncut diamond supply has slipped from nearly 90 percent in the mid-1980s to less than 50 percent today.

THINK ABOUT IT

Why was De Beers unable to sustain a monopoly in its market?

Sources: Rob Walker, "The Right-Hand Diamond Ring," *New York Times,* January 4, 2004; John Wilke, "De Beers Is in Talks to Settle Charges of Price Fixing," *Wall Street Journal,* February 24, 2004; De Beers home page: www.adiamondisforever.com/.

Perfect Competition

market structure
Important features of a market, including the number of buyers and sellers, product uniformity across sellers, ease of entering the market, and forms of competition

perfect competition
A market structure with many fully informed buyers and sellers of an identical product and ease of entry

commodity
A product that is identical across sellers, such as a bushel of wheat

To begin your study of different market structures, familiarize yourself with the descriptions of market features shown in Figure 7.1. The term **market structure** is used to describe the important features of a market. The first market structure to consider is **perfect competition**. Perfectly competitive markets are assumed to have the following features:

1. There are many buyers and sellers—so many that each buys or sells only a tiny fraction of the total market output. This assumption ensures that no individual buyer or seller can influence the price.
2. Firms produce a standardized product, or a **commodity**. A commodity is a product that is identical across producers, such as a bushel of wheat or a share of Microsoft stock. A buyer is not willing to pay more for one particular supplier's product. Buyers are concerned only with the price.
3. Buyers are fully informed about the price, quality, and availability of products, and sellers are fully informed about the availability of all resources and technology.
4. Firms can easily enter or leave the industry. There are no obstacles preventing new firms from entering profitable markets or preventing existing firms from leaving unprofitable markets.

If these conditions exist in a market, individual buyers and sellers have no control over the price. Price is determined by market demand and market supply. Once the market establishes the price, each firm is free to produce whatever quantity maximizes its profit or minimizes its loss. *A perfectly competitive firm is so small relative to the size of the market that the firm's choice about how much to produce has no effect on the market price.*

Example Markets

Examples of perfect competition include markets for the shares of large corporations such as Microsoft or General Electric; markets for foreign exchange, such as yen, euros, and pounds; and those for most agricultural products, such as livestock, corn, and wheat. In these markets, there are so many buyers and sellers that the actions of any one cannot influence the market price.

In the perfectly competitive market for wheat, for example, a single firm is a wheat farm. In the world market for wheat, there are tens of thousands of farms, so any one supplies just a tiny fraction of market output. For example, the thousands of wheat farmers in Kansas together grow less than 3 per-

Market Structure — **Figure 7.1**

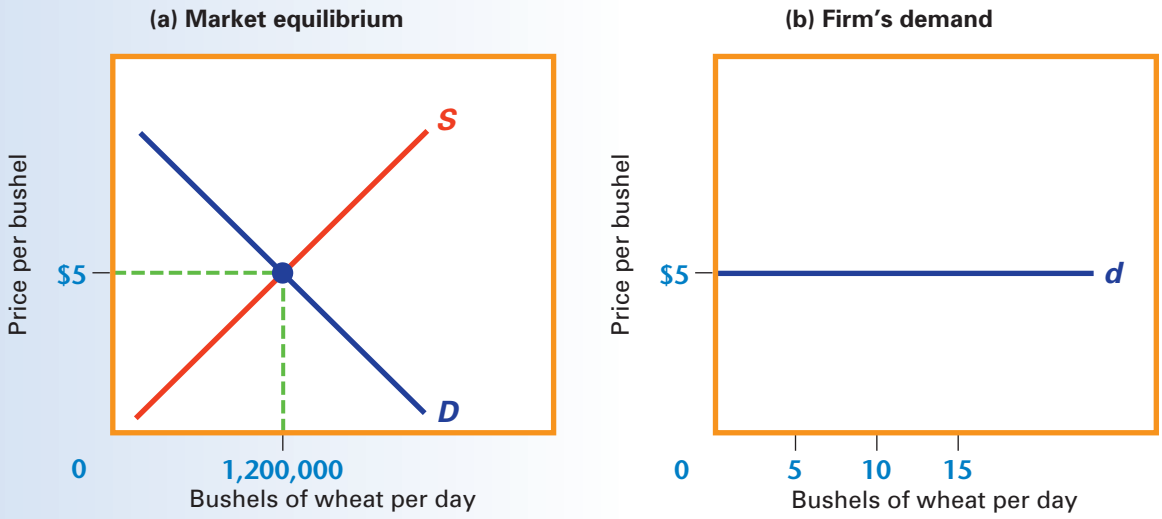
Market structure describes the important features of a market.

Market Feature	Questions to Ask
1. Number of buyers and sellers	Are there many, only a few, or just one?
2. Product's uniformity across suppliers	Do firms in the market supply identical products, or are products differentiated across firms?
3. Ease of entry into the market	Can new firms enter easily, or do natural or artificial barriers block them?
4. Forms of competition among firms	Do firms compete based only on prices, or are advertising and product differences also important?

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Market Equilibrium and Firm's Demand Curve: Perfect Competition **Figure 7.2**

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In panel (a), the market price of $5 is determined by the intersection of the market demand and supply curves. Each perfectly competitive firm can sell any amount at that price. The demand curve facing each perfectly competitive firm is horizontal at the market price, as shown by demand curve d in panel (b).

cent of the world's supply of wheat. No single wheat farmer can influence the market price of wheat. Each farmer is free to supply all he or she wants to supply at the market price.

Market Price

In Figure 7.2, the market price of wheat of $5 per bushel is determined in panel (a) by the intersection of the market demand curve *D* and the market supply curve *S*. Once the market price is established, each farmer can sell however much he or she wants to sell at that market price.

Each farm is so small relative to the market that each has no impact on the market price. Because all farmers produce an identical product—bushels of wheat—anyone who charges more than the market price will sell no wheat. For example, if a farmer charged $5.25 per bushel, wheat buyers would simply turn to other sellers.

Of course, any farmer is free to charge less than the market price. But why do that when all wheat can be sold at the market price? *The demand curve facing an individual farmer is, therefore, a horizontal line drawn at the market price.* In this example, the demand curve in panel (b) is drawn at the market price of $5 per bushel.

It has been said, "In perfect competition there is no competition." Two neighboring wheat farmers in perfect competition are not really rivals. They both can sell all they want at the market price. The amount one sells has no effect on the market price or on the amount the other can sell. Likewise, no two buyers compete for the product because they both can buy all they want at the market price. Each farm, or firm, tries to maximize profit. Firms that ignore this strategy don't survive.

✓ CHECKPOINT

What are the features of perfect competition?

Monopoly

The monopoly market structure is the opposite of the perfect competition structure. A **monopoly** is the sole supplier of a product with no close substitutes.

monopoly
The sole supplier of a product with no close substitutes

Monopoly is from a Greek word meaning "one seller." A monopolist has more market power than does a business in any other market structure. **Market power** is the ability of a firm to raise its price without losing all sales to rivals. A perfect competitor has no market power.

market power
The ability of a firm to raise its price without losing all sales to rivals

barriers to entry
Restrictions on the entry of new firms into an industry

Barriers to Entry

A monopolized market has high **barriers to entry**, which are restrictions on the entry of new firms into an industry. Barriers to entry allow a monopolist to charge a price above the competitive price. If other firms could easily enter the market, they would increase the market supply and drive the price down to the competitive level. There are three types of entry barriers: legal restrictions, economies of scale, and control of an essential resource.

LEGAL RESTRICTIONS

Governments can prevent new firms from entering a market by making entry illegal. Patents, licenses, and other legal restrictions imposed by the government provide some producers with legal protection against competition.

Governments confer monopoly rights to sell hot dogs at civic auditoriums, collect garbage, offer bus and taxi service, and supply other services ranging from electricity to cable TV. The government itself may become a monopolist by outlawing competition. For example, many states are monopoly sellers of liquor and lottery tickets. The U.S. Postal Service (USPS) has the exclusive right to deliver first-class mail.

ECONOMIES OF SCALE

A monopoly sometimes emerges naturally when a firm experiences substantial economies of scale, as reflected by the downward-sloping, long-run average cost curve shown in Figure 7.3. A single firm can sometimes satisfy market demand at a lower average cost per unit than could two or more smaller firms. Put another way, market demand is not great enough to allow more than one firm to achieve sufficient economies of scale.

Thus, a single firm will emerge from the competitive process as the sole supplier in the market. For example, the transmission of electricity involves economies of scale. Once wires are run throughout a community, the marginal cost of linking additional households to the power grid is relatively small. Consequently, the average cost per household declines as more and more households are wired into the system, as reflected by Figure 7.3.

A monopoly that emerges from the nature of costs is called a *natural monopoly*. A new entrant cannot sell

Span the Globe

Flower Auction Holland

Five days a week in a huge building 10 miles outside Amsterdam, some 2,500 buyers gather to participate in Flower Auction Holland. At this auction, more than 14 million flowers from 5,600 growers around the globe are auctioned off each day. The auction is held in the world's largest commercial building, and it is spread across the equivalent of 100 football fields. Flowers are grouped and auctioned off by type—long-stemmed roses, tulips, and so on. Hundreds of buyers are seated in theater settings with their fingers on buttons. Once the flowers are presented, a clock-like instrument starts ticking off descending prices until a buyer stops it by pushing a button. The winning bidder gets to choose how many and which items to take. The clock starts again until another buyer stops it, and so on, until all flowers are sold. Buyers also can bid from remote locations. Flower auctions occur swiftly—on average one transaction occurs every four seconds. This is an example of a *Dutch auction,* which starts at a high price and works down. Dutch auctions are common where multiple lots of similar, though not identical, items are sold, such as flowers in Amsterdam, tobacco in Canada, and fish in seaports around the world.

THINK CRITICALLY

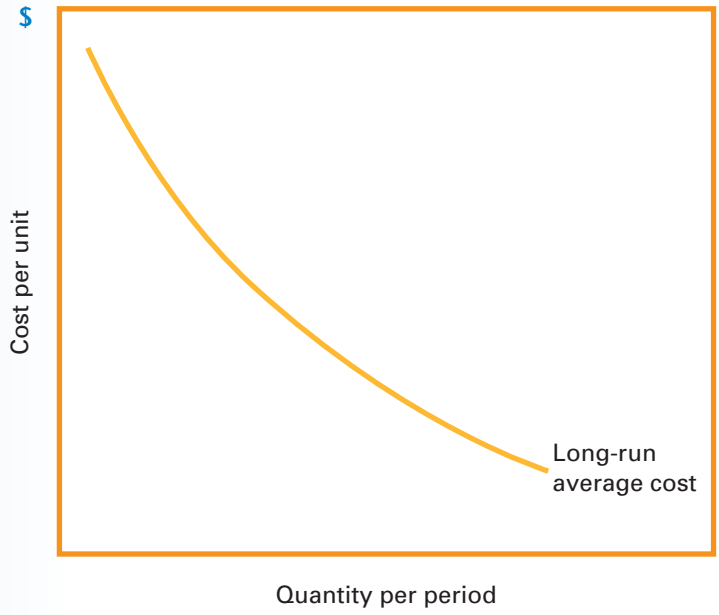
Is Flower Auction Holland a perfect example of a perfectly competitive market? Why or why not?

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Economies of Scale as a Barrier to Entry **Figure 7.3**

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A monopoly sometimes emerges naturally when a firm experiences economies of scale as reflected by a downward-sloping, long-run average cost curve. An individual firm can satisfy market demand at a lower average cost per unit than could two or more firms operating at smaller rates of output.



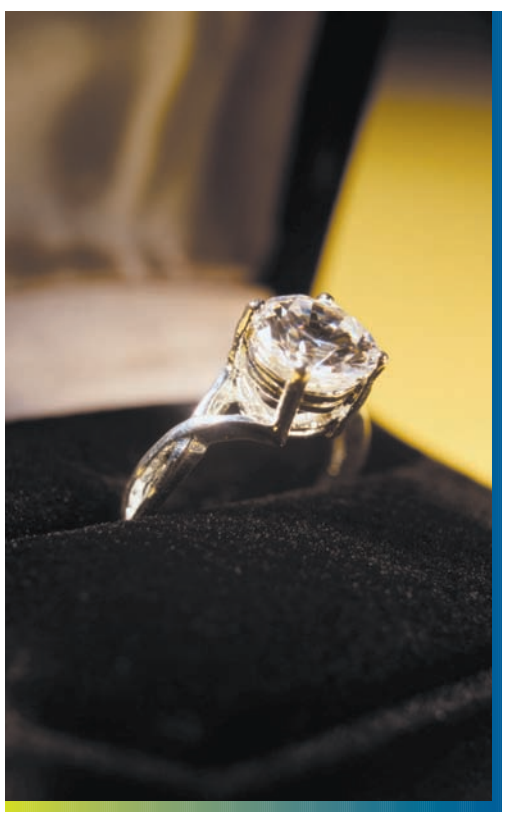
enough output to experience the economies of scale enjoyed by an established natural monopolist. Therefore, entry into the market is naturally blocked.

In less-populated areas, natural monopolies include the only grocery store, movie theater, or restaurant for miles around. These are *geographic monopolies* for products sold in local markets.

CONTROL OF ESSENTIAL RESOURCES

Sometimes the source of monopoly power is a firm's control over some resource critical to production. Following are some examples of the control of essential resources barrier to entry.

- For decades Alcoa controlled the world's supply of bauxite, the key raw material in aluminum.
- China is a monopoly supplier of pandas to the world's zoos. The zoo in Washington, D.C., for example, rents a pair of pandas from China for $1 million a year. As a way of controlling the panda supply, China stipulates that any offspring from the Washington pair become China's property.



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De Beers' advertising slogan is "A diamond is forever." What result does the company hope to achieve with this slogan?

The Graphing Workshop

- A key resource for any professional sports team is a large stadium. Pro teams typically sign exclusive, long-term leases for stadiums in major cities. These leases help block the formation of another league in the sport.

Monopolists May Not Earn a Profit

Because a monopoly, by definition, supplies the entire market, the demand curve for a monopolist's output also is the market demand curve. That demand curve, therefore, slopes downward, reflecting the law of demand. Price and quantity demanded are inversely, or negatively, related.

Even a monopolist with iron-clad barriers to entry may go broke. Although a monopolist is the sole supplier of a good with no close substitutes, the demand for that good may not be great enough to keep the firm in business. After all, many inventions are protected from direct competition by patents, yet most patented products never get produced and many that are produced fail to attract enough customers to survive.

True Monopolies Are Rare

Long-lasting monopolies are rare because a profitable monopoly attracts competitors and substitutes. Even where barriers to entry are initially high, technological change tends to create substitutes. For example, railroads at one time enjoyed a natural monopoly in shipping goods across country. The monopoly ended when the trucking industry was born.

The development of wireless transmission of long-distance telephone calls created competitors for the monopolist AT&T and may soon erase the monopoly held by some local cable TV providers and some local phone services. Likewise, fax machines, e-mail, the Internet, and firms such as FedEx and UPS have all cut into the U.S. Postal Service's monopoly on first-class mail.

NET Bookmark

Access the rate page of the USPS web site through thomsonedu.com/school/econxtra. Describe the process by which the USPS sets its postage rates. What role, if any, do the forces of competition play in rate setting?

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✓ CHECKPOINT

Name and describe the three barriers to entry into a market.

Monopoly and Efficiency

Monopolists are not guaranteed a profit. Monopolies can lose money. Monopolies are relatively rare. So, then, what's the problem?

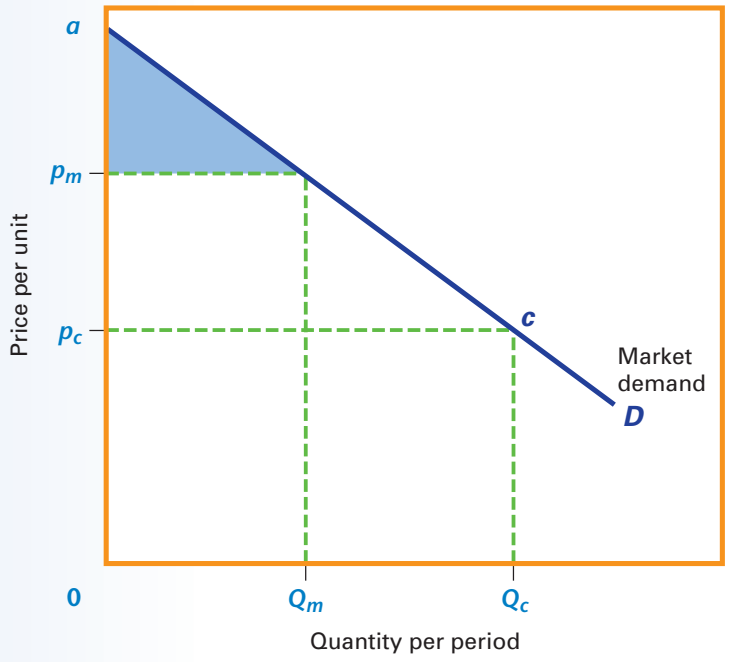
Monopoly Versus Perfect Competition

One way to understand the problem is to compare monopoly to perfect competition. Competition forces firms to be *efficient*—that is, to produce the maximum possible output from available resources—and to supply the product at the lowest possible price. Consumers get a substantial consumer surplus from this low price. However, a successful monopolist typically will charge a higher price than competitive firms would. Thus, fewer consumers will be able to afford to buy the product.

To compare monopoly and perfect competition, suppose D in Figure 7.4 is the *market demand curve* for a product sold in perfect competition. Suppose the market supply curve (which is not shown) intersects the market demand curve at point c. Also suppose the market price is p_c and the market quantity is Q_c. Consumer surplus for the perfectly competitive price is the triangular area below the demand curve and above the price, measured by acp_c. (Recall that *consumer surplus* is the difference between the most consumers are willing to pay for a given quantity of a good and what they actually pay.)

Monopoly, Perfect Competition, and Consumer Surplus **Figure 7.4**

Suppose the market supply curve (which is not shown) intersects the market demand curve at point c. A perfectly competitive industry would produce output Q_c and sell at a price p_c. A monopoly that could produce at that same average cost would produce output Q_m and sell at price p_m. Thus, output is lower and price is higher under monopoly than under perfect competition. With perfect competition, consumer surplus is the entire triangle acp_c. With monopoly, consumer surplus shrinks to the blue-shaded triangle.



What if one firm buys up all the individual firms in the perfectly competitive market, creating a giant monopoly? In this case, the market demand curve becomes the monopolist's demand curve. What if average cost per unit is the same with monopoly as with perfect competition? The monopolist will restrict quantity to Q_m and will increase the price to p_m. With monopoly, consumer surplus shrinks to the blue triangle, which is much smaller than consumer surplus with perfect competition.

Other Problems with Monopoly

Monopolies may reduce social welfare for other reasons besides higher prices to consumers. These include a possible waste of resources and inefficiencies that may develop in their operation.

RESOURCES WASTED SECURING MONOPOLY PRIVILEGE

Because of their size and economic importance, monopolies may have too much influence on the political system, which they use to protect and strengthen their monopoly power. Lawyers' fees, lobbying expenses, and other costs associated with gaining a special privilege from government are largely a social waste because they use up scarce resources but add not one unit to output.

MONOPOLIES MAY GROW INEFFICIENT

The monopolist, insulated from the rigors of market competition, could grow fat and lazy, and thus become inefficient. Corporate executives might waste resources by creating a more comfortable life for themselves. Lavish salaries and corporate perks boost the average cost of production above the competitive level. Monopolists also have been criticized for being slow to adopt the latest production techniques, reluctant to develop new products, and generally lacking in innovation.

Why Monopoly Might Not Be So Bad

For several reasons, some monopolies may not be as socially wasteful as was just described.

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Why are cable rates so high?

ECONOMIES OF SCALE

If economies of scale are substantial, a monopolist might be able to produce output at a lower average cost than competitive firms could. Therefore, the price, or at least the cost of production, could be lower with monopoly than with perfect competition.

GOVERNMENT REGULATION

Government intervention can increase social welfare by forcing the monopolist to lower price and increase output. The government can either operate the monopoly itself, as it does with most urban transit systems, or it can regulate a privately owned monopoly, as it does with local phone services and electricity transmission. You will read more about government regulation later in the chapter.

KEEPING PRICES LOW TO AVOID REGULATION

A monopolist might keep prices below the profit-maximizing level to avoid government regulation. For example, the prices and profits of drug companies, which individually are monopoly producers of patented medicines, come under scrutiny from time to time by public officials who threaten to regulate drug prices. Drug firms might try to avoid such treatment by keeping prices below the level that would maximize profit.

KEEPING PRICES LOW TO AVOID COMPETITION

Finally, a monopolist might keep the price below the profit-maximizing level to avoid attracting competitors. For example, at one time Alcoa was the only U.S. producer of aluminum. Industry observers claimed that the company kept prices and profits below their maximum to discourage competition.

✓ CHECKPOINT

How does monopoly compare to perfect competition in terms of price and quantity?

ETHICS IN ACTION

Price-Control Program Challenged

On May 11, 2000, after years of 15 percent annual rises in the cost of prescription medicine, the state of Maine enacted legislation designed to make such medicine less expensive for the 325,000 residents without prescription drug insurance. The idea was to use the combined buying power of citizens of the entire state to bargain for savings of 25 percent or more on prescription drugs. Sponsors claim that this program does for Maine's citizens what a number of other nations have done for theirs: put pressure on the drug companies to bargain. The pharmaceutical companies counter that Maine is illegally strong-arming them into reducing prices. These firms argue that they have spent hundreds of millions of dollars developing and testing each drug, and they should be allowed to recover those costs. If forced to lower prices in one state, the company says the rest of the country would have to cover the difference. Because of numerous court challenges brought by the pharmaceutical industry, the implementation of the law was put on hold. Finally, on May 19, 2003, the U.S. Supreme Court ruled in Maine's favor and the law went into effect.

THINK CRITICALLY

Some pharmaceutical manufacturers have market power—that is, the ability to raise prices without losing all sales to competitors. Is it ethical for a state to try to force these firms to lower their prices? Why or why not?

Source: "Prescription Drug Laws in Maine," National Conference of State Legislatures, March 21, 2006; "States Await Court Ruling on Drug Case," The Associated Press, January 23, 2003.

Assessment 7.1

Key Concepts

1. What characteristics of farms suggest that these firms operate in perfectly competitive markets?
2. Three years ago, the town of Mt. Utopia had three fast-food restaurants. The town's population has grown rapidly in the past two years. As the town grew, the sales and profits of these restaurants increased. There now are seven fast-food restaurants in Mt. Utopia. None of them earns a large profit. What feature of competitive markets does this demonstrate? Explain your answer.
3. Identify a firm that operates in your community that you think has a significant amount of monopoly power. Explain why you chose this firm.
4. At one time, the American Telephone and Telegraph Corp. (AT&T) had a great deal of monopoly power and earned large profits. In recent years AT&T has lost money. What happened to AT&T's monopoly power?

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Graphing Exercise

5. Use data in the table to draw two graphs: the market demand and supply curve, and the individual demand curve for the Apex Coal Mine. Apex is able to produce a maximum of 1,000 tons of coal per month. What is the market equilibrium price? Explain how you were able to derive the individual demand curve for Apex Coal.

Market Coal Demand and Supply Schedule Per Month

Price per Ton	Market Demand (tons)	Market Supply (tons)
$200	4,000,000	8,000,000
$175	5,000,000	7,000,000
$150	6,000,000	6,000,000
$125	7,000,000	5,000,000
$100	8,000,000	4,000,000

Think Critically

6. **Advertising** Although individual farmers do not purchase advertising for their products, it is common for groups of farmers to join together to do this. In New York, for example, the Upstate Milk Cooperative collects funds from thousands of dairy farmers and uses the money to buy advertisements for milk products. Explain why this makes sense. What are the farmers trying to accomplish?
7. **History** Between 1880 and 1900, the Standard Oil Company came to control almost 90 percent of the production of oil products in the United States. It did this by buying up or driving other firms out of business. With this monopoly power, the firm's owners were able to earn as much as a 20 percent profit on the value of the firm's assets, such as its refineries, pipelines, etc. Much of the firm's profit was used to develop new technologies that, according to the owners, contributed to lower prices. In your opinion, is it possible for monopolies to be good for consumers? Explain your answer.

Sharpen Your Skills



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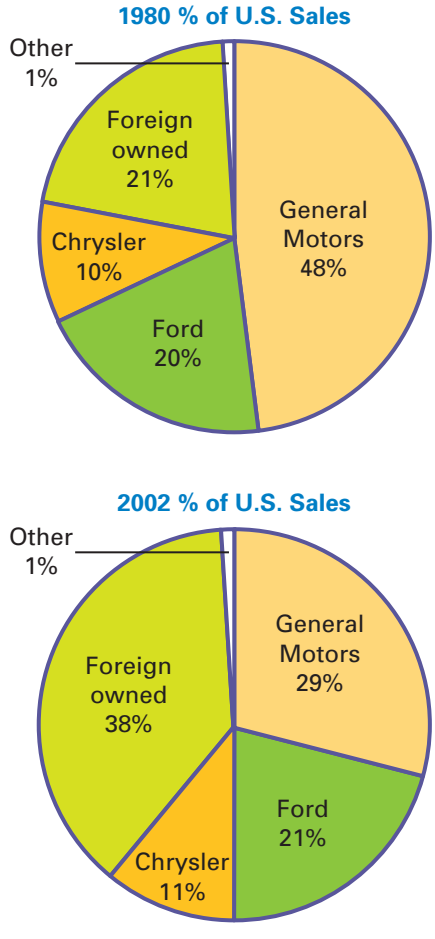
Read Pie Graphs

Study the pie graphs to the right that show the approximate percentage of motor vehicle sales in this country made by each of the three largest U.S. producers, foreign-owned producers, and other U.S.-owned producers in 1980 and 2002. Summarize the changes in the U.S. automobile market that these graphs show.

Apply Your Skill

1. If U.S. producers wanted to regain a larger share of the U.S. motor vehicle market, how could they achieve their goal?
2. How could the U.S. government help U.S. producers regain their share of the U.S. motor vehicle market? Do you think the U.S. government should do these things? Explain your answer.

Share of U.S. Motor Vehicle Sales, 1980 & 2002



7.2 Monopolistic Competition and Oligopoly

Objectives

- Identify the features of monopolistic competition.
- Identify the features of oligopoly, and analyze firm behavior when these firms cooperate and when they compete.

Overview

You are now aware of the two extreme market structures of perfect competition and monopoly. Next you will learn about monopolistic competition and oligopoly, the two structures between the extremes. These are the market structures in which most firms operate. Firms in each of these market structures face downward-sloping demand curves for their products, so each has some control over the price. Monopolistic competition is like a golf tournament in which each player strives for a personal best. Firms in oligopoly are more like players in a tennis match, where each player's actions depend on how and where the opponent hits the ball.

Key Terms

monopolistic competition

oligopoly

cartel

In the News

Foreign Automakers Challenge the "Big Three" Oligopoly

The most visible oligopoly in the United States over the last century has been the "Big Three" automakers: Ford, Chrysler, and General Motors. By the 1930s the investment costs were so great that no new domestic car makers could enter the market. This lasted until the 1970s when Detroit's "Big Three" sold about 80 percent of the nation's vehicles. GM at its peak supplied more than half the market. By the late 1970s, the oligopoly by the "Big Three" was being challenged by foreign imports such as Honda and Toyota. By marketing smaller, cheaper, more fuel-efficient automobiles, foreign car makers were able to attract car buyers worried about higher gasoline prices. Then in 1982 with the building of the Honda plant in Marysville, Ohio, foreign manufacturers began to make cars in the United States. Over time these companies, gaining a reputation for quality and value, increased their share of the U.S. market. Some advocates of U.S. automakers wish that somehow the old oligopoly structure could be preserved. They support barriers to entry into the market and have been reluctant to embrace competition.

THINK ABOUT IT

How were foreign automakers able to overcome the barriers to entry into the U.S. automobile oligopoly? Do you think they changed the competitiveness of the U.S. automobile industry? Why or why not?

Sources: "Managing Detroit," *Washington Post,* January 26, 2006; James P. Womack, "Mr. Ford's Wrong Turn; Why U.S. Automakers Can't Blame Japan," *Washington Post,* December 4, 2005.

Monopolistic Competition

monopolistic competition
A market structure with low entry barriers and many firms selling products differentiated enough that each firm's demand curve slopes downward

In monopolistic competition, many firms offer products that differ slightly. As the expression **monopolistic competition** suggests, this structure contains elements of both monopoly and competition. The "monopolistic" element is that each firm has some control over its price. In other words, a firm can raise its price without losing all its customers. Because the products of different suppliers differ slightly, each firm's demand curve slopes downward. The "competition" element of monopolistic competition is that barriers to entry are so low that any short-run profit will attract new competitors, erasing profit in the long run.

Market Characteristics

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Because barriers to entry are low, firms in monopolistic competition can, in the long run, enter or leave the market with ease. Consequently, there are enough sellers that they behave competitively. There also are enough sellers that each tends to get lost in the crowd. A particular firm, in deciding on a price, does not worry about how other firms in the market will react. For example, in a large city, an individual restaurant, gas station, drugstore, dry cleaner, or convenience store tends to act *independently* from its competitors.



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Monopolistic competition may result in higher costs for firms, but it also provides more choices for consumers, such as a choice among many restaurants. Would you be willing to pay more for food if it means you would have more restaurants to choose from?

Product Differentiation

In perfect competition, the product is identical across suppliers, such as a bushel of wheat. In monopolistic competition, the product differs slightly among sellers, as with the difference between one rock radio station and another. Sellers differentiate their products in four basic ways.

PHYSICAL DIFFERENCES

The most obvious way products differ is in their physical appearance and their qualities. The differences among products are seemingly endless. Shampoos, for example, differ in color, scent, thickness, lathering ability, and bottle design. Packaging also is designed to make a product stand out in a crowded field, such as panty hose in a plastic eggshell and potato chips in a can.

LOCATION

The number and variety of locations where a product is available also are means of differentiation. Some products seem to be available everywhere, including the Internet. Finding other products requires some search and travel.

SERVICES

Products also differ in their accompanying services. For example, some take-out restaurants deliver. Others don't. Some retailers offer product demonstrations by a well-trained staff. Others are mostly self-service.

PRODUCT IMAGE

A final way products differ is in the image the producer tries to foster in the consumer's mind. For example, some products use celebrity endorsements to boost sales.

Costs of Product Differentiation

Firms in monopolistic competition spend more on advertising and other promotional expenses to differentiate their products than do firms in perfect competition. This increases average cost. Some economists argue that monopolistic competition results in too many firms and in product differentiation that is artificial. Others argue that consumers are willing to pay a higher price for a wider choice.

Excess Capacity

Firms in monopolistic competition are said to operate with excess capacity. *Excess capacity* means that a firm could lower its average cost per unit by selling more. Such excess capacity exists, for example, with gas stations, drugstores, banks, convenience stores, restaurants, motels, bookstores, and flower shops.

As a specific example, industry analysts argue that the nation's 22,000 funeral homes could efficiently handle 4 million funerals a year, but only about 2.5 million people die. So the industry operates at about 60 percent capacity. This results in a higher average cost per funeral because resources remain idle much of the time.

✓ CHECKPOINT

What are the important features of monopolistic competition?



Oligopoly

Oligopoly is a Greek word meaning "few sellers." When you think of "big business," you are thinking of **oligopoly**, a market dominated by just a few firms. Perhaps three or four firms account for most market output. Because this market has only a few firms, each must consider the effect of its own actions on competitors' behavior. Oligopolistic industries include the markets for steel, oil, automobiles, breakfast cereals, and tobacco.

oligopoly
A market structure with a small number of firms whose behavior is interdependent

In some oligopolies, such as steel or oil, the product is identical, or undifferentiated, across producers. Thus, an *undifferentiated oligopoly* sells a commodity, such as an ingot of steel or a barrel of oil. In other oligopolies, such as automobiles or breakfast cereals, the product is differentiated across producers. A *differentiated oligopoly* sells products that differ across producers, such as Ford versus Toyota or General Mills' Wheaties versus Kellogg's Corn Flakes.

Firms in an oligopoly are interdependent. Therefore, each firm knows that any changes in its price, output, or advertising may prompt a reaction from its rivals. Each firm may react if another firm alters any of these features.

Barriers to Entry

Why have some industries evolved into an oligopolistic market structure, dominated by only a few firms, whereas other industries have not? Although the reasons are not always clear, *an oligopoly often can be traced to some barrier to entry, such as economies of scale or brand names built up by years of advertising*. Most of the barriers that applied to monopoly also apply to oligopoly.

ECONOMIES OF SCALE

Perhaps the most significant barrier to entry is economies of scale. The *minimum efficient scale* is the lowest rate of output at which a firm takes full advantage of economies of scale. If a firm's minimum efficient scale is relatively large compared to industry output, then only a few firms are needed to produce the total amount demanded in the

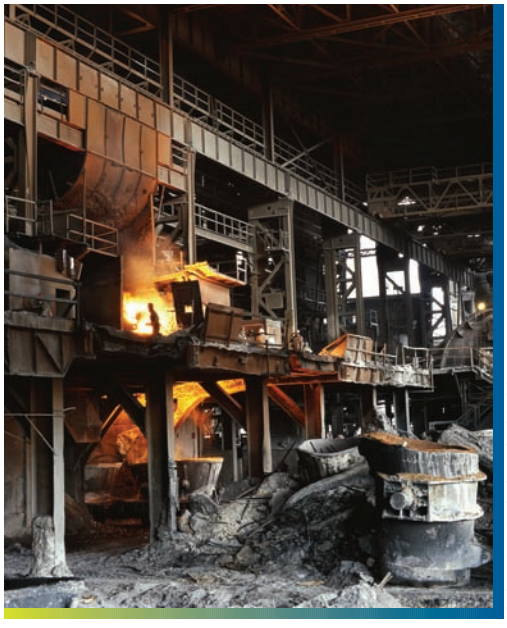
market. For example, an automobile factory of minimum efficient scale could make enough vehicles to supply nearly 10 percent of the U.S. market. To compete with existing producers, a new entrant must sell enough automobiles to reach a competitive scale of operation.

THE HIGH COST OF ENTRY

The total investment needed to reach the minimum efficient size often is huge. A new auto factory or new computer chip plant can cost more than $2 billion. The average cost of developing and testing a new drug exceeds $800 million. Advertising a new product enough to compete with established brands also could require enormous outlays. A failed attempt at securing a place in the market could bankrupt a new firm. That's why most new products usually come from large, existing firms, which can better withstand the possible loss. For example, McDonald's spent $100 million in its unsuccessful attempt to introduce the Arch Deluxe. Unilever lost $160 million when its new laundry detergent, Power, failed to catch on.

PRODUCT DIFFERENTIATION COSTS

Oligopolists often spend millions and sometimes billions trying to differentiate their products. Some of this provides valuable information to consumers and offers them a wider array of products. However, some forms of product differentiation appear to be of little value. Slogans such as "Generation Next" or "Welcome to the Coke side of life" convey little information, yet Pepsi and Coke spend huge sums on such messages. For example, Coke spends more than $2 billion per year on advertising. Product differentiation expenditures create barriers to entry.



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Why do you think the steel industry is considered to be an oligopoly?

When Oligopolists Collude

To decrease competition and increase profit, oligopolistic firms, particularly those that offer identical products, may try to *collude,* or agree on a price. *Collusion* is an agreement among firms in the industry to divide the market and fix the price. A **cartel** is a group of firms that agree to act as a single monopolist to increase the market price and maximize the group's profits.

Compared with competing firms, colluding firms usually produce less, charge more, earn a higher profit, and try to block the entry of new firms. Consumers lose consumer surplus because of the higher prices, and potential entrants suffer from being denied the chance to compete in the market.

Collusion and cartels are illegal in the United States. However, monopoly profit can be so tempting that some U.S. firms break the law. Many other countries are more tolerant of cartels. Some even promote them, as with the 11 nations of OPEC, the world oil cartel. If OPEC members were ever to meet in the United States, those officials could be arrested for price fixing. Even though they are outlawed in some countries, cartels can operate worldwide because there are no international laws banning them.

The biggest obstacle to maintaining a profitable cartel is the powerful temptation to cheat on the agreement. By offering a price slightly below the established price, individual firms in the cartel usually can increase their own sales and profit. A cartel collapses when cheating becomes widespread.

A second obstacle to cartel success is the entry of rival firms. The profit of

cartel

A group of firms that agree to act as a single monopolist to increase the market price and maximize the group's profits

the cartel attracts entry, entry increases market supply, and increased supply forces down the market price. A cartel's continued success therefore depends on the ability to block the entry of new firms or to get new firms to join the cartel.

Finally, cartels, like monopolists, must be concerned that technological change can erode their market power. For example, hydrogen-powered fuel cells may replace gasoline in automobiles.

OPEC's initial success attracted so many other oil suppliers that OPEC now accounts for only about 40 percent of the world's oil output. As a result, OPEC has lost much of its market power. Efforts to form cartels in the world markets for bauxite, copper, coffee, and some other products have failed so far.

When Oligopolists Compete

Because oligopolists are interdependent, analyzing their behavior is complicated. At one extreme, the firms in the industry may try to coordinate their behavior so they act collectively as a single monopolist, forming a cartel, as was just discussed. At the other extreme, oligopolists may compete so fiercely that price wars erupt, such as those that flare up in markets for cigarettes, computers, airline fares, and long-distance phone service. Consumers benefit from the lower prices resulting from price wars.

You have now worked through the four market structures: perfect competition, monopolistic competition, monopoly, and oligopoly. Features of the four are summarized and compared in Figure 7.5.



In small groups, brainstorm five additional examples to those given in Figure 7.5 of industries that compete in each of the four market structures (perfect competition, monopolistic competition, oligopoly, and monopoly).

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What are the major differences among the four market structures?

✓ CHECKPOINT

What are the important features of oligopoly, and how do oligopolists that cooperate compare to those that compete?

Comparison of Market Structures — Figure 7.5

	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of firms	most	many	few	one
Control over price	none	limited	some	complete
Product differences	none	some	none or some	none
Barriers to entry	none	low	substantial	insurmountable
Examples	wheat, shares of stock	convenience stores, bookstores	automobiles, oil	local electricity and local phone service

Assessment 7.2

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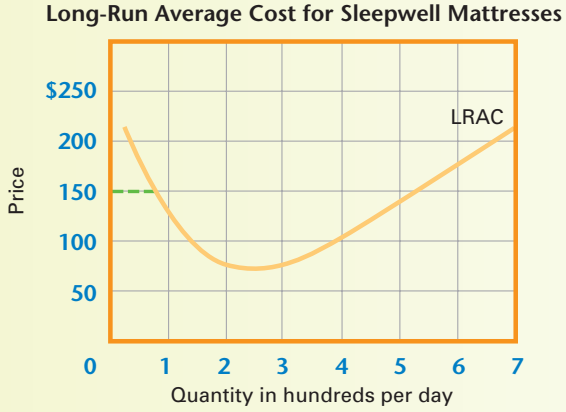
Key Concepts

1. There are probably 20 or more brands of laundry detergent in the grocery store where your family shops. Make a list of different ways in which producers try to differentiate one detergent brand from another. Why can some brands have prices that are much higher than the price of others and still sell well?
2. Why can't most oil producers compete successfully with large oil refiners such as Chevron, Shell Oil, or ExxonMobil?
3. In the 1990s, many nations that grew coffee beans tried to set up a cartel that would have limited coffee production and stabilized prices at a higher level. This effort failed. Explain why it is so hard to create a successful cartel when there are many producers.

Graphing Exercise

4. The graph below shows the long-run average cost curve (discussed in Chapter 5) for Sleepwell Mattresses, one of several firms that manufacture mattresses. At present, suppose the firm maximizes profit in the short run by producing at the rate of output where its long-run average cost is $150 per mattress. The firm's owners realize they could reduce their long-run average cost by expanding output so as to benefit from economies of scale. Based on the graph below, what is the smallest rate of output at which the firm would take full advantage of economies of scale? What, approximately, would be the long-run average cost at that output rate? Identify two ways the firm could try to increase the amount sold.

Long-Run Average Cost for Sleepwell Mattresses



Think Critically

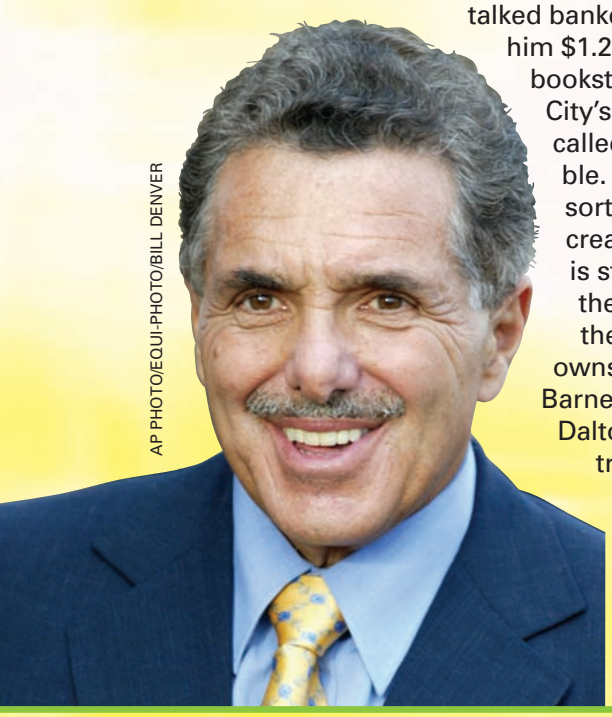
5. **Research** In 2006 the American Broadcasting Company (ABC) charged $2.5 million for a 30-second advertisement on television during the Super Bowl. Investigate the cost of this type of advertising during the latest Super Bowl. Why are businesses willing to spend this amount for a 30-second advertisement? What are they trying to accomplish?

movers & shakers

Leonard Riggio *CEO, Barnes & Noble*

Leonard Riggio entered Brooklyn Technical High School when he was just 12 years old. He was an easy target of his classmates. Not only was he a young freshman, he also was short. To fit in, he became the class clown. But Riggio was no slouch. After graduation he earned the money to attend evening college by working at a bookstore during the day.

At age 24 he told his boss he could run a better bookstore and opened his own. Six years later, restless for a bigger challenge, he talked bankers into lending him $1.2 million to buy a bookstore on New York City's Fifth Avenue called Barnes & Noble. Here he tested all sorts of ideas to increase sales. Riggio is still using some of these ideas today in the 800+ stores he owns under the Barnes & Noble and B. Dalton Bookseller trade names. He discounted bestsellers, sold some books by the pound, and introduced Americans to gigantic super-bookstores with cafés, public rest rooms, and Sunday hours.



AP PHOTO/EQUI-PHOTO/BILL DENVER

As chairman of the board of the world's largest bookseller, the power Riggio wields concerns many of his competitors. They believe he has the power to make a new book a success or a failure, simply by deciding to sell or not to sell that book in his stores. In 1998 the 4,000+ independent booksellers who comprise the American Booksellers Association (ABA) filed suit against Barnes & Noble and Borders, the nation's second largest bookstore chain, accusing the two giant chains of violating the federal Robinson-Patman Act of 1936. This act bars large businesses from using their purchasing power to gain marketing advantage. In 2001, just days after the trial began, the two chains each agreed to pay the ABA $2.35 million as partial reimbursement of attorney fees. Both sides claimed victory. Of the accusation, Riggio said, "Our system was based on the principle that we should compete strenuously." Hard work and a fierce competitive spirit got Riggio where he is today. "I don't shed a tear for the little guy," he told a reporter for *Business Week.*

Most of Riggio's stores average up to 25,000 square feet and carry up to 200,000 titles. He also sells books on Barnes&Noble.com. Riggio regularly is recognized as a marketing genius. Not bad for someone who was once the undersized clown of his high school class.

SOURCE READING

Leonard Riggio said, "Our system was based on the principle that we should compete strenuously," and "I don't shed a tear for the little guy." Evaluate these statements in terms of both the legality and ethics of large corporations using their size to gain advantage in the marketplace.

ENTREPRENEURS IN ACTION

In small groups, make a list of other "superstores" that have taken over their respective markets. Discuss whether you think this is good or bad for the consumers, small business owners in those markets, and the economy in general.

Sources: I. Jeanne Dugan, *Business Week,* June 18, 1998; www.barnesandnobleinc.com

7.3 Antitrust, Economic Regulation, and Competition

Objectives

- Explain the goal of U.S. antitrust laws.
- Distinguish between the two views of government regulation.
- Discuss why U.S. markets have grown more competitive in recent decades.

Overview

In 1776 Adam Smith wrote, "People of the same trade seldom meet together, even for merriment or diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices." The tendency of firms to seek monopolistic advantage is understandable in light of their drive to maximize profit. But monopoly often harms the economy. Public policy can promote competition in markets where competition seems desirable. It also can reduce the harmful effects of monopoly in markets where the output can be most efficiently produced by one or a few firms.

Key Terms

antitrust activity

merger

deregulation

In the News

Foot-Tingling Deregulation

When the power industry's natural monopoly was deregulated at the federal level, experts hoped the action would create competition in power generation throughout the country. The same experts warned, however, that deregulation also could lead to neglect of the transmission grids that delivered the power. The accuracy of this warning was made obvious when testimony before a federal panel pinpointed the triggering incident for the great northeastern blackout of mid-August, 2003: an overheated, melting electrical transmission line outside Cleveland that eventually sagged enough to touch a tree and short-circuit. The utility responsible for that part of the transmission grid already had a bad summer. Its New Jersey operation had been under fire for rolling blackouts that injured shore businesses and for inadequate maintenance that allowed stray electricity to run through the ground. This neglect left residents of Brick, New Jersey, tingling when they stepped into pools and Jacuzzis. In addition, one of its nuclear power plants had been shut down when an acid leak had eaten through the steel lid of a reactor. A federal judge ruled it had violated the Clean Air Act by not installing pollution-control equipment at a coal-fired plant.

THINK ABOUT IT

What would you recommend to a government panel trying to correct the situation caused by the power industry's natural monopoly?

Sources: *New York Times,* August 19, 21, and 23, 2003.

Antitrust

Although competition typically promotes the most efficient use of the nation's resources, an individual firm would prefer to operate as a monopoly. If left alone, a firm might try to create a monopoly by driving competitors out of business, by merging with competitors, or by colluding with competitors to rig prices and increase profits. **Antitrust activity** attempts to prohibit efforts to monopolize markets in which competition is desirable.

U.S. Antitrust Activity

Antitrust activity tries to

1. Promote the market structure that will lead to greater competition, and
2. Reduce anticompetitive behavior.

Antitrust Laws

Antitrust laws attempt to promote socially desirable market performance. Three early laws dealt with the growing problems of anticompetitive market structures and anticompetitive behavior. These included the Sherman Antitrust Act, the Clayton Act, and the Federal Trade Commision Act.

The Sherman Antitrust Act of 1890 outlawed the creation of trusts, restraint of trade, and monopolization. A *trust* is any firm or group of firms that tries to monopolize a market. The Clayton Act of 1914 was passed to outlaw certain practices not prohibited by the Sherman Act and to help government stop a monopoly before it develops. The Federal Trade Commission (FTC) Act of 1914 established a federal body to help enforce antitrust laws. The FTC has five full-time commissioners assisted by a staff of mostly economists and lawyers.

These three laws provide the U.S. antitrust framework. This framework has been clarified and enhanced by amendments and court decisions over the years.

Mergers and Antitrust

One way that firms may try to reduce competition is by merging with competing firms. A **merger** is the combination of two or more firms to form a single firm. Much of what federal antitrust officials do today is to approve or deny proposed mergers. These officials consider the merger's impact on the share of sales by the largest firms in the industry. If a few firms account for a large share of sales in the market (say, more than half), any merger that would increase that share may be challenged.

Federal guidelines sort all mergers into two broad categories. *Horizontal mergers* involve firms in the same market, such as a merger between competing oil companies. *Nonhorizontal mergers* include all other types of mergers. Horizontal mergers currently hold greater interest for antitrust officials. When determining whether to challenge a particular merger, officials consider factors such as the ease of entry into the market and possible efficiency gains from the merger. They would ask, for example, can the merger increase the resulting firm's economies of scale, or make the firm more competitive in the world market?

Flexible Merger Policy

In recent years, the government has shifted from rules that restrict big mergers to a more flexible approach. This new approach allows big companies to merge if the combination is more efficient or more competitive with other big firms in the market. For example, in 2006 the government approved Whirlpool's $1.7 billion acquisition of Maytag even though Whirlpool was the world's largest maker of major home appliances and Maytag was ranked third. Government officials noted that growing competition from Asia would keep prices down. As one antitrust official put it, "I do not believe that size alone is a basis to challenge a merger." However, just the threat of a legal challenge has stopped some potentially anticompetitive mergers.

✓ CHECKPOINT

What is the goal of antitrust laws?

antitrust activity
Government efforts aimed at preventing monopoly and promoting competition in markets where competition is desirable

merger
The combination of two or more firms to form a single firm

Regulation of Natural Monopolies

Antitrust laws try to prevent monopoly in those markets where competition seems desirable. On the other hand, the *regulation of natural monopolies* tries to control price, output, the entry of new firms, and the quality of service in industries in which monopoly appears inevitable or even desirable. *Natural monopolies,* such as local electricity transmission, local phone service, or a city subway system, are regulated. Several other industries, such as land and air transportation, were regulated in the past based on the same idea, but have since been deregulated.



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Why do you think it is desirable for local energy transmission to be regulated by government?

Two Views of Government Regulation

Why do governments regulate the price and output of certain markets? There are two views of regulation. The first view has been the one discussed so far—namely, such regulation is in the *public interest.* Regulation promotes social welfare by reducing the price and increasing the output when a market is served most efficiently by one or just a few firms.

A second view is that such regulation is not in the public interest but is in the *special interest* of regulated firms. According to this view, well-organized producer groups expect to profit from government regulation by persuading public officials to impose restrictions that these groups find attractive. Such restrictions include limiting entry into the industry and preventing price competition among existing firms.

Producer groups may claim that competition in their industry would hurt consumers. For example, the alleged problem of "cutthroat" competition among taxi drivers has led to regulations that eliminated price competition and restricted the number of taxis in many large metropolitan areas. The problem is that regulation has made taxis more expensive and harder to find.

The special-interest theory may be valid even when the initial intent of the legislation was in the consumer interest. Over time, the regulators may start acting more in the special interests of producers.

✓ CHECKPOINT

Compare the two views of government regulation.

Competitive Trends in the U.S. Economy

The U.S. economy has grown more competitive in the last half century. The number of industries judged to be competitive increased from about half of all industries in 1960 to more than three-fourths of all industries today. Causes of increased competition include antitrust activity, deregulation, international trade, and technological change. Consider the impact of each.

Antitrust Activity

Antitrust officials now spend most of their time evaluating the impact of proposed mergers on market competition. Although few mergers ultimately are challenged by government, just the threat of a legal challenge has discouraged many potentially anticompetitive mergers.

Perhaps the most significant antitrust case in recent years not involving a merger was the agreement antitrust officials reached with Microsoft. Microsoft was charged with having a monopoly in

e-conomics

MICROSOFT ON TRIAL

The most significant antitrust case in the last decade was that brought by the U.S. Justice Department (DOJ) and several states against Microsoft Corporation. The DOJ accused Microsoft of engaging in a pattern of "predatory conduct" to protect its operating-system monopoly and to extend that monopoly into Internet software. Microsoft disputed the charges and said the government was interfering with its right to create new products that benefit consumers. Ultimately the Federal District Court hearing the case found that Microsoft had attempted to monopolize the Web browser market by unlawfully "tying" Internet Explorer with Windows. The court then ordered that Microsoft's business practices in this regard be restricted. The court also ordered that Microsoft be split into two companies. One company would handle the Windows-based operating system. The other company would specialize in applications software. Microsoft appealed the decision to the U.S. Court of Appeals. This court upheld the finding that Microsoft violated antitrust laws and acted illegally in maintaining a monopoly in its operating system. However, the appeals court ordered that the restructuring plan be reconsidered by the lower court. In September 2001, before the appellate order could be complied with, the DOJ announced it would not seek a breakup of Microsoft, but instead would ask the court for a series of tough restrictions. In November 2001, Microsoft reached a settlement with the DOJ and with most of the states that had brought the case. The settlement gave personal-computer makers greater freedom to install non-Microsoft software on new machines and to remove access to competing Microsoft features, such as Internet browsers. It also banned exclusive contracts and prohibited Microsoft from acting against companies that take advantage of these freedoms. Further, it required Microsoft to disclose design information to hardware and software makers, so they can build competing products that will run smoothly with Windows. In mid-2004, the settlement was upheld by the U.S. Court of Appeals over the objections of the state of Massachusetts and two industry trade groups. Massachusetts was the only state among the nine states that originally sued Microsoft that had not settled the case.

THINK CRITICALLY

Who benefits from the settlement Microsoft reached with the Justice Department?

Sources: Ina Fried, "Appeals Court Reaffirms Microsoft Settlement," CNET News.com, July 1, 2004; John Wilke and Ted Bridis, "Justice Department Says It Won't Seek Court-Ordered Breakup of Microsoft," *Wall Street Journal,* September 7, 2001.

operating-system software and with attempting to extend this monopoly to the Web browser market. Among other things, the settlement with Microsoft gives personal-computer makers greater freedom to install non-Microsoft software on new machines. Read more about this important antitrust case in the E-conomics feature on page 209.

Deregulation

deregulation
A reduction in government control over prices and firm entry in previously regulated markets, such as airlines and trucking

For most of the twentieth century, industries such as trucking, airlines, securities trading, banking, and telecommunications were regulated by the government to limit price competition and restrict entry. The trend in recent decades has been toward **deregulation**, which reduces or eliminates government regulations. For the most part, deregulation has increased competition and benefited consumers.

Take, for example, the regulation and deregulation of airlines. The Civil Aeronautics Board (CAB), established in 1938, once strictly regulated the U.S. interstate airline business. Any potential entrant interested in serving an interstate route had to persuade the CAB that the route needed another airline, a task that proved impossible. During the 40 years of regulation, potential entrants submitted more than 150 applications for long-distance routes, *but not a single new interstate airline was allowed.* The CAB also forced strict compliance with regulated prices. A request to lower prices on any route would result in a rate hearing, during which both the CAB and competitors scrutinized the request. In effect, the CAB created a cartel that fixed prices among the 10 existing major airlines and blocked new entry.

In 1978, despite opposition from the established airlines and their labor unions, Congress passed the Airline Deregulation Act, which allowed price competition and new entry. By 2000, airfares averaged 27 percent below previously regulated prices. Passenger miles nearly tripled. Airlines became more productive by filling a greater percentage of seats. The net benefits of airline deregulation to consumers now exceed $25 billion a year, or more than $80 per U.S. resident.

Regulations that limited competition also have been repealed in trucking, securities trading, banking, and telecommunications. For the most part, these industries have become more competitive as a result of deregulation. Consumers benefit from lower prices and better products.

International Trade

Foreign imports increased competition in many industries, including autos, tires, and steel. Many imported goods were attractive to U.S. consumers because of their superior quality and lower prices. Finding themselves at a cost and technological disadvantage, U.S. producers initially asked for government protection from foreign competitors through trade barriers, such as quotas and tariffs. Despite their efforts to block foreign goods, U.S. producers still lost market share to imports.

For example, General Motors dominates U.S. auto manufacturing. GM's sales account for half of U.S. automobile sales by U.S. firms. However, when sales by Japanese and European producers are included, GM's share of the U.S. auto market falls to less than one third. To survive in the market, U.S. producers improved quality and offered products at more competitive prices.

Technological Change

Some industries are growing more competitive as a result of technological

NETBookmark

A review of the history of airline deregulation from a conservative viewpoint is available online from the Heritage Foundation's magazine. Access this web site through thomsonedu.com/school/econxtra. What actions was the Department of Transportation considering at the time this review was written? What nonregulatory alternatives does the author suggest?

thomsonedu.com/school/econxtra

change. Here are some examples: In the last two decades, the prime-time audience share of the three major television networks (NBC, CBS, and ABC) dropped from 91 percent to 46 percent as satellite and cable technology delivered many more channels.

Despite Microsoft's dominance in operating systems, the packaged software market for personal computers barely existed in 1980. It now thrives in a technology-rich environment populated by thousands of software makers. Also, the Internet has opened possibilities for greater competition in a number of industries, from online stock trading to all types of electronic commerce. Some web sites offer consumers information about the price and availability of products. This makes comparison shopping easier and lowers the transaction costs of buying and selling.

✓ CHECKPOINT

Why have U.S. markets grown more competitive in recent decades?

Main Idea

Role of Competition

The trend toward e-commerce has led to greater competition in the U.S. economy. For example, competition among online sellers lowers costs and prices and encourages producers to make more of the products buyers want. Competition among online buyers increases price and allocates goods and services to people who are willing and able to pay for them.



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Assessment 7.3

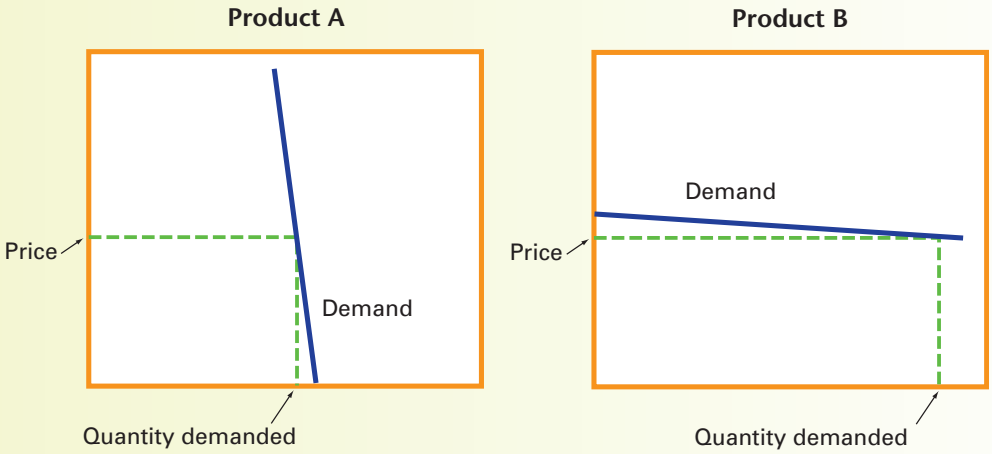
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Key Concepts

1. Imagine there are two large discount stores in a small town. Describe one way in which consumers might be harmed if these stores merged and one way they might benefit.
2. The basic antitrust laws in the United States have not changed very much in many years. Still, over time, there has been a significant difference in the way these laws have been enforced. What could explain this situation?
3. Fifty years ago, the vast majority of shoes sold in the United States were manufactured in this country. In recent years, U.S.-made shoes have accounted for less than 10 percent of this market. How has foreign competition reduced the monopoly power of U.S. shoe producers?
4. What would happen to the market power of a firm that found, patented, and received FDA approval to market a drug that prevents HIV infections? Why might such a firm not charge an extremely high price for this drug?

Graphing Exercise

5. Study the two demand curves below. One is for a drug manufactured by Acme Pharmaceuticals that thousands of people need in order to stay healthy. The other is for a particular brand of shampoo. In which case is demand elastic and in which case is it inelastic? Which of these products is Product A and which is Product B? How did you make this determination? Which of these firms has greater monopoly power? In general, do firms with elastic or inelastic demand have more monopoly power?



Think Critically

6. **Government** The U.S. Postal Service (USPS) lost billions of dollars in the decade between 1992 and 2002. In 2003, some people argued that the USPS should be privatized or sold to private businesses. What has happened to the USPS since then? Has its monopoly power been increased or decreased? Does it remain as a government monopoly or has it been sold? Do you think the situation has improved or worsened for consumers?

CONNECT TO HISTORY



The North American Fur Trade

From 1804 to 1816, two companies—the Hudson Bay Company (HBC) headquartered in London, and the Northwestern Company (NWC) of Montreal—dominated the North American fur trade. Both companies operated over large areas of the Canadian wilderness. For the most part, each company respected the other's territory and business operation without a formal market-sharing agreement.

With the start of the Napoleonic War in Europe, the demand for furs declined sharply because British traders could no longer sell North American furs to Europeans. The HBC suffered greater losses than its rival, because the HBC's charter prohibited it from trading anywhere but England. The NWC, on the other hand, was able to find markets in China, the United States, and even Europe. Despite the drop in demand, the HBC refused to slow down its operations because it hoped that the war would be short. It also did not want to jeopardize its business relations with the Native Americans, from whom it purchased the pelts. Instead, in an attempt to control supply and maintain prices, it chose to store the furs it collected.

However, where the two companies previously had respected each other's territory, the HBC's financial problems led it to end their informal agreement. It began to move into the area in which the NWC had been trapping exclusively. The cost of obtaining furs rose as competition between the companies drove up the price each had to pay the Native Americans. Both companies also engaged in attempts to disrupt the other's operation by employing "bully boys." This harmful competition ended in 1821, when the companies agreed to merge and form a monopoly. The new company brought an end to the destructive practices and lowered costs by taking advantage of the economies of scale. The combined company also provided a unified front in purchasing from the Native Americans.

THINK CRITICALLY

Referring to the characteristics of monopolistic competition and oligopoly, analyze the behavior of the Hudson Bay Company and the Northwest Company during the period from 1804 to 1821. What effect do you think the merger of the two companies had on the price of fur?



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7 Chapter Assessment

Summary

7.1 Perfect Competition and Monopoly

a *Perfectly competitive* markets share four features: (1) they have many buyers and sellers; (2) producers supply the same standard product; (3) buyers are fully informed about the price, quality, and availability of products and sellers are fully informed about all resources and technology used to make them; and (4) firms and resources are free to enter or leave the market.

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b The price that individual producers in perfect competition charge is determined by market supply and market demand. A firm that charged more than the market price would have no customers.

c A *monopoly* is the only supplier of a product that has no close substitutes. For monopolies to exist in the long run, there must be *barriers to entry.* These may include legal restrictions such as patents, economies of scale that make established firms more efficient than new firms, and control of essential resources not available to other firms.

d The demand curve for a monopoly slopes down from left to right. This means that the firm must lower its price to sell more. Compared to perfect competition, monopolies typically restrict output to charge a higher price.

e Many people believe that monopolies harm the general welfare because they may waste resources, exert undue influence on the government, or grow lazy and inefficient. Others believe that monopolies may have lower costs and prices because of economies of scale and that government regulation can prevent them from exploiting consumers.

7.2 Monopolistic Competition and Oligopoly

a *Monopolistic competition* is a market structure with many firms offering similar but not identical products. Each monopolistic competitor tries to attract customers by differentiating its product. Forms of product differentiation include physical differences, sales locations, services offered with the product, and the product's image.

b *Oligopoly* is a market structure in which a few firms dominate the market and are interdependent. Oligopolies typically exist in markets where there are economies of scale and high costs of entry.

c Oligopolists sometimes cooperate with each other in pricing their products. When they mutually agree to set prices, they collude, though this would be illegal in the United States. Internationally, some nations have worked together to establish *cartels* that are intended to increase or stabilize prices by limiting supply.

7.3 Antitrust, Economic Regulation, and Competition

a The federal government has passed three basic *antitrust* laws intended to limit the monopoly power of large businesses: (1) the Sherman Antitrust Act, (2) the Clayton Act, and (3) the Federal Trade Commission Act.

b Mergers are either horizontal—when firms supplying the same market join—or nonhorizontal—when firms not supplying the same product join. Many of the firms that came to dominate their markets gained their power through horizontal mergers. Much of federal antitrust activity today is directed toward limiting the ability of firms to merge if doing so would result in a new firm with significant market power.

c An alternative to limiting the ability of firms to merge is to regulate those that have a significant amount of market power. The federal government and all states have regulatory agencies that are designed to protect the public's interests.

d In recent years, there has been a trend toward *deregulation* of many parts of the economy. U.S. markets have grown more competitive in the last few decades because of deregulation, antitrust activity, technological change, and foreign trade.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer.

_____ **1.** A market structure with many fully informed buyers and sellers of an identical product and with no barriers to entry

_____ **2.** A sole supplier of a product with no close substitutes

_____ **3.** Restrictions on the entry of new firms into an industry

_____ **4.** The ability of a firm to raise its price without losing all its sales

_____ **5.** A market structure with no entry barriers and many firms selling products differentiated enough that each firm's demand curve slopes downward

_____ **6.** A market structure with a small number of firms whose behavior is interdependent

_____ **7.** A group of firms that agree to act as a monopolist to increase the market price and maximize the group's profits

_____ **8.** Government efforts aimed at preventing monopoly and promoting competition in markets where competition is desirable

_____ **9.** The combination of two or more firms into a single firm

_____ **10.** A product that is identical across sellers

_____ **11.** A reduction in government control over prices and firm entry in previously regulated markets

_____ **12.** Important features of a market, including the number of buyers and sellers and the product's uniformity across sellers.

a. antitrust activity

b. barriers to entry

c. cartel

d. commodity

e. deregulation

f. market power

g. market structure

h. merger

i. monopolistic competition

j. monopoly

k. oligopoly

l. perfect competition

Review Economic Concepts

13. Which of the following statements is *not* true of firms in *perfect competition*?

a. All producers charge the same price.

b. All producers make the same product.

c. Each firm tries to sell more by reducing its price.

d. There are no barriers to entry.

14. True or False The demand curve for a single firm in competition is a horizontal line.

15. A firm operating in the __?__ market structure has no market power.

16. True or False *Monopolies* may emerge naturally when a firm has substantial economies of scale.

17. *Monopolies* must lower the price of the products they sell in order to
    a. sell more output.
    b. earn a profit.
    c. shift the demand curve.
    d. meet their competition.

18. **True or False** By definition, all *monopolies* earn substantial profits.

19. **True or False** Most *monopolies* tend to last for a long time.

20. Suppose a giant *monopoly* is created when one firm buys up all the individual firms in a perfectly competitive market. In this case, the __?__ curve becomes the monopolist's demand curve.

21. Firms in *monopolistic competition*
    a. all produce exactly the same product.
    b. all charge the same price.
    c. all earn the same profit.
    d. all work to differentiate their products.

22. **True or False** One problem for society resulting from *monopoly* is that the monopoly may have too much influence on the political system.

23. Which of the following is not a way in which sellers in *monopolistic competition* differentiate their products?
    a. physical differences
    b. location and services
    c. collusion
    d. product image

24. A firm that experiences __?__ can lower its average cost by selling more of the good.

25. The demand curve facing an individual firm operating in perfect competition
    a. is a vertical line drawn at the number of units.
    b. is a horizontal line drawn at the market price.
    c. slopes down from left to right.
    d. slopes up from left to right.

26. In a(n) __?__ *oligopoly,* the product is identical across producers.

27. Firms in an *oligopoly*
    a. are totally independent from each other.
    b. are interdependent.
    c. always have excess capacity.
    d. none of the above is true.

28. **True or False** The minimum efficient scale is the greatest rate of output at which a firm takes full advantage of economies of scale.

29. Which of the following industries is most likely to be regulated by government?
    a. consumer products
    b. electrical service
    c. dry-cleaning service
    d. precious jewels

30. **True or False** Government regulatory agencies are designed to protect the public's interests.

31. Each of the following is a basic federal antitrust law in the United States *except*
    a. the Fair Labor Standards Act of 1938.
    b. the Clayton Act of 1914.
    c. the Sherman Act of 1890.
    d. the Federal Trade Commission Act of 1914.

32. **True or False** Consumers usually benefit from *deregulation* because of the resulting lower prices.

Apply Economic Concepts

33. **Analyze Pricing in Oligopoly** The two largest producers of commercial aircraft in the world are Airbus of Europe and the Boeing Corporation of the United States. Most economists regard the market for large commercial aircraft as a good example of an oligopoly. Describe what you think Boeing would do if Airbus decreased the price of its airplanes by 20 percent. How does this show the interdependence of these firms?

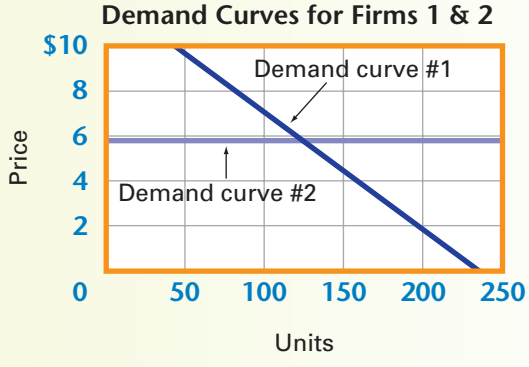
34. **Business Law** An important question today is whether limits should be placed on what consumers may download from the Internet. According to copyright law, those who produce literature, music, films, or works of art should be able to profit from what they create. They should, in effect, have a monopoly on their work. However, if their work is placed on the Internet for others to copy for free, they may choose not to produce anything at all. Investigate the current status of this issue, and state your opinion of what should be done.

35. **History** There was a time when Nabisco, Post Cereals, Kellogg's, and General Mills sold nearly 75 percent of the breakfast cereal purchased in the United States. These firms were part of an oligopoly, but those days are now gone. Describe what has happened to reduce the monopoly power of these firms in the market. Think about the breakfast cereal shelves in your grocery store.

36. **Sharpen Your Skills: Auto Industry** Review changes in the distribution of sales in the U.S. automobile market that were presented in the Sharpen Your Skills activity on page 199 of this chapter. Assume that the trend in sales between 1980 and 2002 demonstrated by the pie graphs continues for another 22 years to 2024. How would the U.S. economy be affected? Would U.S. consumers benefit or be harmed? What would happen to businesses and people employed in the U.S. auto industry?

37. **Problems with Monopoly** During the 1960s the three largest U.S. producers of automobiles (Ford, General Motors, and Chrysler) sold nearly 90 percent of the cars purchased by U.S. consumers. During the 30 years between 1970 and 2000 these firms lost about one-third of their market to foreign competition that was more technologically advanced. What problem common to monopolies does this situation demonstrate?

38. **Distinguish Between Competition and Monopoly** The graph below provides demand curves for two different firms. One of them is for a competitive firm and the other is for a firm with monopoly power. Identify the firm that is competitive and the one that is a monopoly. Explain how you know which is which. What would happen to the sales of the competitive firm if it tried to raise its price? What would happen to the firm that is a monopoly? Why do businesses prefer to have monopoly power?



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39. Access **EconDebate Online** at thomsonedu.com/school/econxtra. Read the policy debate entitled "Should the antititrust exemption for baseball be eliminated?" Analyze this issue from both points of view, and write a paragraph summarizing each side.

Unit 3



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Market Institutions



Businesses



Labor Markets



Financial Markets and Business Growth

You are an important decision maker in our market economy. Your consumption choices and those of other consumers determine what gets produced. To help supply the products that you and others demand, several institutions have developed to nurture a market economy. Among the most important are businesses, labor markets, and financial markets. You already know something about all three. You have interacted with businesses all your life. Most of you have observed labor markets first hand. You are even familiar with financial markets—from credit cards to bank accounts.

8 Businesses

8.1 Entrepreneurs

8.2 Sole Proprietorships and Partnerships

8.3 Corporations and Other Organizations



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CONSIDER

Why do some people want to call themselves "boss"?

Why start a business if most new businesses don't last five years?

What does your summer lawn-mowing operation have in common with Wal-Mart?

What do *Corp.* or *Inc.* in a company's name tell you about how the owners treat company debt?

How could it be possible that most U.S. businesses have no hired employees?

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8.1 Entrepreneurs

Objectives

- Understand the role of the entrepreneur in a market economy.
- Differentiate entrepreneurs from people who perform a limited business role.

Overview

In a market economy, people are free to risk their time and their savings to start a business. If the business succeeds, they are rewarded with profit. If the business fails, they could lose a bundle. Chances of success are not great. Most new businesses don't last five years. On the other hand, some businesses survive, a few thrive, and a tiny few make their founders wealthy. Despite the high rate of business failure, the promise of profit attracts many prospective entrepreneurs. By putting their ideas into action, entrepreneurs drive the economy forward.

Key Terms

financial capital

innovation

In the News

African Americans Choose Entrepreneurship

Donna McDonald learned to sew when she was thirteen. She worked for others before opening her own business in Atlanta, Georgia, in 1985. After moving back to her hometown of Louisville, Kentucky, in 1995 she started a business that focused on personalized golf bags and other promotional products. Now at age 43 she is one of 1.2 million African-American business owners. McDonald's business, called Exclusively for You, has three employees and soon will add a fourth. A recent report from the U.S. Census Bureau shows that African American-owned businesses rose 45 percent nationwide from 1997 to 2002. The majority of these businesses are small, with 4 out of 10 service-oriented. For many African Americans like Donna, entrepreneurship is an opportunity to work for themselves. For others this trend emerges from necessity as they lose manufacturing jobs. Most African Americans see business ownership as the surest way to accumulate wealth and to leave a legacy for the next generation.

THINK ABOUT IT

What entrepreneurial qualities can you see in Donna McDonald?

Sources: "Blacks' Business Boom," *Louisville Courier-Journal,* April 21, 2006; Krissah Williams, "Region Sees Large Rise of Black-Owned Businesses," *Washington Post,* April 19, 2006.

Role of Entrepreneurs

An *entrepreneur* is a profit-seeker who develops a new product or process and assumes the risk of profit or loss. The entrepreneur is the prime mover in the market economy—a visionary, someone who can see what others can't. The entrepreneur's role is to discover and introduce new and better products and more efficient ways of doing things. Because new products often involve long and costly development, they are risky. Entrepreneurs must have the confidence to accept that risk and must inspire confidence in others, such as resource suppliers and lenders. In short, *an entrepreneur comes up with an idea, turns that idea into a marketable product, accepts the risk of success or failure, and claims any resulting profit or loss.*

An entrepreneur goes into business to earn a profit by satisfying consumer wants. A business can consist simply of one self-employed person earning a few thousand dollars mowing lawns during the summer. Or, a business can be as complex as Wal-Mart, with 1.8 million employees, 4,000 stores around the world, and annual sales exceeding $350 billion. The lawn-mowing operation and Wal-Mart are both businesses. There are about 28 million businesses in the United States. Most consist of just one self-employed person. Most of these self-employed enterprises will remain tiny. A handful will become the largest businesses in the world.

Entrepreneurs and Creative Change

The introduction of new or better products and new production methods are sources of technological progress and economic growth in the economy. Entrepreneurs initiate four types of creative changes in a market economy.

1. **Introduce New Products** Some entrepreneurs try to come up with new products, opening up markets that had not existed. For example, the Segway® Human Transporter, a personal transport device, was developed by Dean Kamen and introduced in late 2002. The product is marketed as an alternative to walking or riding a bicycle.

2. **Improve Quality of Existing Products** Some entrepreneurs begin with an existing product and make it better. For example, Howard Schultz took the simple cup of coffee and turned it into liquid gold by offering higher quality and greater variety in a more inviting atmosphere. Founded by Schultz in 1985, Starbucks Coffee now is a multibillion-dollar operation with more than 100,000 employees in more than 10,000 locations around the world.



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With some new products, entrepreneurs invent a whole new market, like the market for the Segway® Human Transporter. Do you think this new product will succeed in the marketplace? Why or why not?

3. **Introduce New Production Methods** Some entrepreneurs combine resources more efficiently to reduce production costs. They use less costly materials, employ better technology, or combine resources in more economical ways. Henry Ford, for example, introduced the assembly line, where automobiles move along a conveyer and the workers stay put. Ford didn't invent the automobile, but his assembly line made owning one affordable to millions of households.

4. **Introduce New Ways of Doing Business** Some entrepreneurs step outside existing business models to create a new way of doing business. For example, Michael Dell began in 1984 with $1,000 and the idea to sell computers directly to customers rather than through retailers. His made-to-order computers are sold by phone and over the Internet. Dell is now the world's largest computer seller, with sales exceeding $165 million *a day*. Mary Kay Ash did the same for skin care products and cosmetics, selling more than $2 billion a year directly to consumers around the world through independent Mary Kay consultants.

Financing the Business

A good idea in itself does not guarantee profit. To succeed, entrepreneurs must figure out how best to transform their ideas into reality. They must acquire the necessary resources, including hiring employees and buying supplies. They also must obtain **financial capital**, that is, the money needed to start or expand the business.

Financial capital may be obtained through bank loans or from *venture capitalists*—individuals or companies that specialize in financing start-up firms. Entrepreneurs also often draw from their own savings to invest in the new enterprise. Some even sell all they own to get the business off the ground. For example, the filmmaker Michael Moore sold all his possessions to finance his first documentary film, *Roger and Me*. To accept such risks, entrepreneurs must have confidence in their ideas.

NET Bookmark

To learn more about the Segway® Human Transporter, access the company's web site through thomsonedu.com/school/econxtra. What was inventor Dean Kamen's vision for his company?

thomsonedu.com/school/econxtra

financial capital
Money needed to start or expand a business

Ask the Xpert!

thomsonedu.com/school/econxtra

How do businesses raise cash to finance startups and expansions?



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Describe the ways in which entrepreneurs may obtain financial capital for their business.

Profit Attracts Competitors

If an innovation succeeds in the market, many people benefit. The entrepreneur is rewarded with profit and the satisfaction of creating something of value. Workers are rewarded with more and better jobs. Consumers are rewarded with new and better products. The government benefits from higher tax revenue, which can be used to fund public goods and services or to lower other taxes. Overall the economy reaches a higher level of business activity. This translates into a higher standard of living for the people who live in the economy.

Entrepreneurs may earn profit in the short run. However, profit attracts competitors and substitutes. Other businesses will enter the market in the long run and try to duplicate the success of the original entrepreneur. Competitors try to offer a better product or a lower price. Because these copycats must be creative and take risks, they, too, could be considered entrepreneurs.

The original entrepreneur must fight to remain profitable in the long run. Ultimately, the pursuit of profit can lead to a chain of events that creates new and better products, more competition, more production, higher quality, and lower prices. Entrepreneurs are the key players in a market economy. They supply the creative sparks that drive the economy forward.

If the new business loses money and has no prospects for a turnaround, this tells the entrepreneur to find a better use for the resources. Profits tell entrepreneurs they are on the right track. Losses tell them to change tracks. You could think of profits as a way of keeping score, a way of telling entrepreneurs whether they are winning or losing. When an entrepreneur wins, many others in the economy win as well. When an entrepreneur loses, it's mostly the entrepreneur who suffers.

✓ CHECKPOINT

Explain the role of entrepreneurs in a market economy.

Main Idea

Growth

An entrepreneur's investment in a new business venture benefits the economy as a whole. The investment leads to a higher level of business activity, and ultimately to a higher standard of living for the people who live in the economy.



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Who Isn't an Entrepreneur?

Some people may carry out just one of the functions of an entrepreneur. For example, they may dream up a new product or process, they may manage resources, or they may assume the risk of success or failure. Carrying out just one of the roles alone does not make you an entrepreneur, however. A way of determining more about who is an entrepreneur is to learn more about people in business who are not entrepreneurs.

Invention, Innovation, and Entrepreneurs

Innovation is the process of turning an invention into a marketable product. Inventors are entrepreneurs if they bear the risk of success or failure. Most inventors work for firms as paid employees. For example, corporations such as Pfizer, Dow Chemical, or Intel employ thousands of scientists to improve existing products and develop new ones. These corporate inventors, sometimes referred to as *intrapreneurs,* are paid even in years when their creative juices slow down. Because these hired inventors take no more risks than most other employees, they are not considered to be entrepreneurs.

Figure 8.1 shows the source of inventions since 1980 as measured by the number of U.S. patents awarded. The number of patents more than doubled between 1980 and 2004. The share of patents awarded to individuals fell by half from 22 percent to only 11 percent, however. Some of these individual inventors are in the business of creating new products and then selling the idea to others. These inventors accept risks in a way that the inventors working for corporations do not. Therefore, self-employed inventors usually are entrepreneurs.

Managers and Entrepreneurs

Most entrepreneurs do more than simply sell their good ideas to others. They try to bring their ideas to the market by going into business. Then they claim any profit or loss that results. Starting up a business does not necessarily mean the entrepreneur must manage the business. But the entrepreneur does have the power to hire and fire the manager.

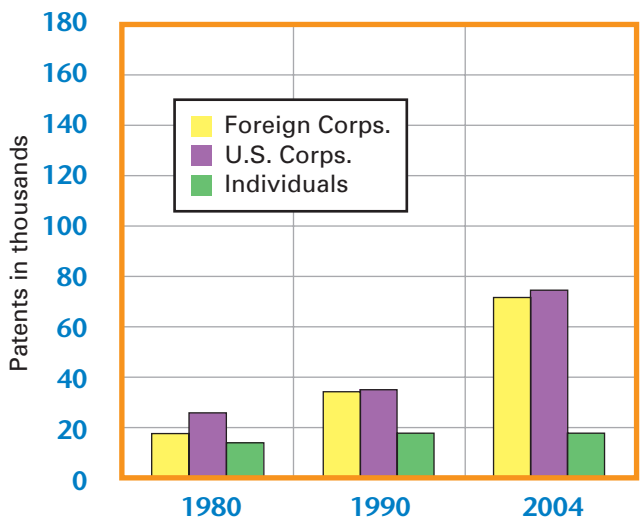
For example, Dean Kamen, inventor of the Segway® Human Transporter, created a company to make and sell his

innovation
The process of turning an invention into a marketable product

Source of U.S. Patents Awarded for Inventions by Year — **Figure 8.1**

The number of patents grew from 61,800 in 1980 to 163,500 in 2004. In 1980, 22 percent of all patents were awarded to individuals. By 2004, only 11 percent went to individuals.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Table 754.



invention. Kamen also hired a chief executive officer to run the business. Even though he doesn't run the business himself, Kamen still is an entrepreneur because he has the power to hire and fire the manager. Kamen's chief executive officer is a well-paid employee, but he is not an entrepreneur.

Stockholders and Entrepreneurs

More than half of all households in the United States—more than 60,000,000 of them—now own corporate stock. If a corporation fails, stockholders could lose the amount they paid for that particular stock. If the corporation thrives, the stock value will increase and stockholders will benefit.

People buy a corporation's stock because they believe in the managers' ability to increase the value of the business. They believe the managers can make more profitable use of their funds than they themselves can. At the same time, the stockholders assume the risk of the company's success or failure. Does this make the stockholders entrepreneurs? No, it does not. True entrepreneurs do more than take the risk of success or failure. They decide what to produce and usually figure out how to produce it profitably. An individual stockholder, on the other hand, typically has little say in the firm's operation.

✓ CHECKPOINT

What groups perform part of the entrepreneur's role but are not considered entrepreneurs?

Span the Globe

Some Chinese Entrepreneurs Strike It Rich

One way to measure the success of the Chinese economy's transition to a free market system is to look at the wealth of its new entrepreneurs. *Forbes* magazine's recent listing of China's richest individuals finds three billionaires at the top. All carved their niches by founding businesses in the exploding areas of consumer goods and services. Online gaming, appliance retailing, and home improvement ventures provided the sources for the US $1.5 billion, $1.3 billion, and $1.27 billion fortunes amassed by these facilitators of change. The listing by *Forbes* came just a few days after China's premier said that the government would continue to encourage entrepreneurial activities as a means of moving the country's development forward.

THINK CRITICALLY

If you lived in China and wanted to start a business, what field would you choose, and why?

Source: "Chinese Entrepreneurs Head Rich List," People's Daily Online, March 12, 2005.



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Assume the woman sitting on the right hand side of this table started a business and has hired the others at the table to manage it. Who is the entrepreneur and what power does this person have over the others?

Assessment 8.1

Key Concepts

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1. Which of the following describes an entrepreneur? (a) a person employed to mow lawns by a landscaping firm or (b) a person who buys a lawn mower to cut her neighbor's lawn for $20. Explain your answer.
2. What creative changes have fast-food restaurant owners used to distinguish their products from similar products offered by other firms?
3. Why aren't entrepreneurs likely to earn large profits from their businesses over many years?
4. Why wasn't the Bell Labs employee who invented the first transistor an entrepreneur?
5. What role do entrepreneurs play in the U.S. economy?

Graphing Exercise

6. Many entrepreneurs begin their businesses by inventing a product and then patenting it. Construct a bar graph from the data in the table that concerns patents granted by the federal government. What does your graph show about the number of inventions that are being made by individuals and corporations? Why are only some of these inventions examples of entrepreneurship?

Patents Granted by the Federal Government, 1980–2000

Year	Patents Granted to Individuals	Patents Granted to U.S. Corporations
1980	13,800	27,700
1985	12,900	31,200
1990	17,300	36,100
1995	17,400	44,000
2000	22,400	70,900

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2001, p. 494.

Think Critically

7. **History** Review an American history textbook to identify a historical figure who was an important entrepreneur. Explain what this person did and the influence he or she had on the development of the United States.
8. **Marketing** Entrepreneurship may involve finding a new way to market an existing product. For example, Wal-Mart sells the same products as many other discount stores, but it is much more successful than most. What did Sam Walton do differently that made him a successful entrepreneur?

movers + shakers

Roxanne Quimby *Burt's Bees*

Roxanne Quimby learned at a young age that hard work pays off. As a child, she helped her grandmother selling sandwiches at a Boston beach. An immigrant from Siberia, her grandmother "demonstrated to me what it was like to start from nothing and make a living," Roxanne remembers. Roxanne tried her own hand at business early on. She began by selling homemade cookies, and later made and sold yarn dolls in her Massachusetts neighborhood.

By the early 1980s, she was the divorced mother of twins living in a cabin she built herself in Maine. To support her family she raised chickens and rabbits, and waited tables. That's when she met Burt Shavitz, her town's local beekeeper. Burt agreed to teach Roxanne about beekeeping if she would help him sell his honey. Before long, in addition to selling honey, Roxanne put her degree from the San Francisco Art Institute to use by making candles and furniture polish from the discarded beeswax. She traveled to flea markets and crafts fairs selling the products she and Burt created. In addition to selling, however, Roxanne spent a lot of time listening to her customers. She heard over and over that what they wanted was personal-care products made from natural ingredients.



SUPPLIED PHOTO

Soon Roxanne stopped selling furniture polish and began to make and sell new personal-care items. To accommodate the changes, she and Burt moved their operation from Roxanne's kitchen to an old bowling alley. Within a year their small company needed more room, so they relocated again. By 1992, Burt's Bees was manufacturing about half a million beeswax candles a year along with personal-care items. By 1994, sales totaled $3 million.

As their business once again outgrew its walls, Burt and Roxanne decided to move the company to North Carolina, home to numerous cosmetics manufacturers. Although in favor of moving the company, Burt opted to remain in Maine, taking a lesser role in the company. A few years later he sold his share of Burt's Bees to Roxanne, leaving her in charge of the ever-growing company. Roxanne keeps her business growing by setting daily, weekly, and monthly goals. "Sometimes I don't know how I'm going to reach them, but it's important to set them. People tend to get bogged down in the process [of setting goals], but that's backwards," she states. Her first goal was sales of $10,000 a year. In 2002, her goal was sales of $50 million. Keeping a focus on the customer is her means of reaching her goals. "I call myself a media junkie. Keeping abreast of what's happening gives you a clear understanding of what your customer is all about," she says.

In October 2003, Roxanne sold Burt's Bees to an investment firm for more than $175 million. She remains as company president. Projections called for sales to grow to $500 million within a few years of the sale. Today about 500 employees work at Burt's Bees headquarters in Raleigh, North Carolina. They make more than 150 products, including lip color, facial creams, hair products, natural remedies, and specialty items for men and for babies. Most of Burt's Bees' products are 100 percent natural, harvested from nature. All of the products contain only natural colors and natural preservatives. They are sold in retail stores, online, and through the mail.

SOURCE READING

Re-read Roxanne Quimby's comments about setting goals. How important do you think her focus on goal setting was to the success of Burt's Bees? Explain your answer.

Source: Denise Lang, "Roxanne Quimby Mines Her Own Beeswax for Millions," www.boomercareer.com/public/127_4.cfm?sd=41"; www.burtsbees.com.

ENTREPRENEURS IN ACTION

Imagine you are Roxanne Quimby and selling beeswax candles at flea markets. Write a business plan that would incorporate each of the steps she took from that point forward to become a successful entrepreneur. Include plans for product development and ideas for handling growth.

8.2 Sole Proprietorships and Partnerships

Objectives

- Describe the advantages and disadvantages of sole proprietorships.
- Describe the advantages and disadvantages of partnerships.

Overview

Entrepreneurs make all kinds of decisions when they start a business. One of the first is to decide how to organize the firm. What form of business would work best? Entrepreneurs may organize their firm in one of three basic ways: as a sole proprietorship, a partnership, or a corporation. Each way has its advantages and disadvantages. Sole proprietorships and partnerships are the easiest business forms to start, but they each also may pose much risk for business owners.

Key Terms

sole proprietorship
liability
partnership
general partnership
limited partnership

In the News

Owning a Piece of the Reds

When the Cincinnati Reds baseball team changed principal owners in January 2006 for the eleventh time since 1902, a new limited liability company (LLC) was created. The old company had been led by Cincinnati financier Carl Lindner, who owned 37.5 percent of the team. Lindner sold his controlling interest in the team to another Cincinnatian, Bob Castellini. By purchasing controlling interest Castellini will run the club. In the deal, other LLC members bought a share of the team (about 4 percent each) for at least $6.5 million each. However, these owners will have no say in how the club is run and will likely see no financial gain until they sell their shares. Most bought shares for the prestige of owning part of the Reds. The days of professional sports teams being owned by a single individual are probably over. LLCs and limited partnerships make up nearly half of the major league baseball teams. Others are corporations or corporate-owned.

THINK ABOUT IT

Assuming you could afford it, would you invest in a professional sports team if you had no say in the operation of the team and had little chance of making a profit until you sell your share?

Sources: Kyle Nagel, "Castellini Group Buys 70 Percent of Shares," *Dayton Daily News,* January 20, 2006; Cliff Peale, "P&G Chief to Buy Piece of the Reds," *Cincinnati Enquirer,* January 27, 2006.

Sole Proprietorship

sole proprietorship
The simplest form of business organization; a firm that is owned and run by one person, but sometimes hires other workers

The simplest form of business organization is the **sole proprietorship**, where a firm is owned and run by a single individual. That person, the sole proprietor, earns all the firm's profits and is responsible for all the firm's losses. Although some sole proprietorships hire many employees, most do not. Most have just one self-employed individual. A self-employed person is not considered to be a hired employee.

Who Is a Sole Proprietor?

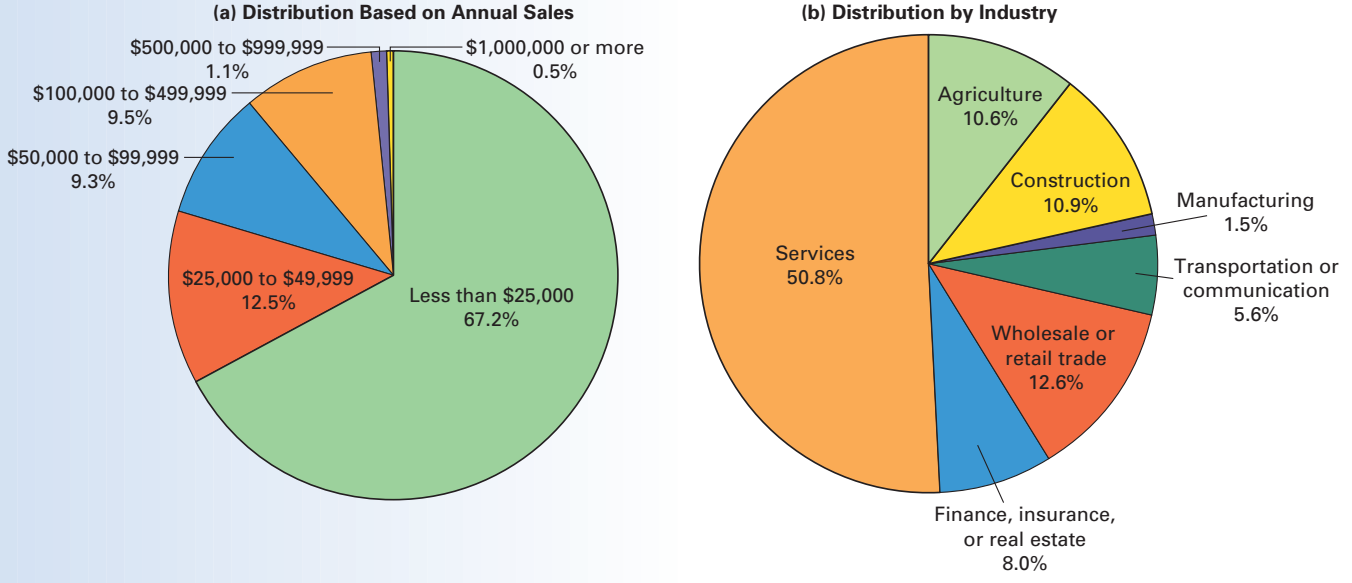
The majority of businesses in your community are owned by sole proprietors. These include self-employed plumbers, farmers, hair stylists, truckers, authors, lawyers, doctors, and dentists. Most sole proprietorships consist of just one self-employed person. A self-employed person may work at the business full time throughout the year, or only part of the year, or part-time. For example, most self-employed farmers hold other jobs as their primary occupations.

About three-quarters of all businesses in the United States are owned by sole proprietors. There are 21 million sole proprietorships. Because this type of business is typically small, however, sole proprietorships generate only 5 percent of all U.S. business sales.

Figure 8.2 shows the distribution of sole proprietorships based on firm revenue and based on the industry in which the business operates. You can see in pie chart (a) that nearly all sole proprietorships are small. About two-thirds reported annual sales, or revenue, of less than $25,000. Only 0.5 percent had sales of $1 million or more.

Pie chart (b) in Figure 8.2 shows the industry breakdown of sole proprietors. Half supply services, such as health services and business services. About one in ten is in agriculture.

Distribution of Sole Proprietorships Based on Annual Sales and by Industry — **Figure 8.2**



Two-thirds of all sole proprietorships earn $25,000 or less a year. Most sole proprietorships are service businesses.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726, 727, and 795.

Advantages of Sole Proprietorships

The sole proprietorship is the most common type of business for a reason. It offers several advantages.

1. **Easy to Start** A sole proprietorship is easy to start. This form involves minimum red tape and legal expense. A sole proprietor might need to secure a local business license and a permit to collect state or local sales taxes.
2. **Few Government Regulations** Once established, a sole proprietorship faces few government regulations beyond maintaining accurate tax records and complying with employment laws. As noted, most consist of only the self-employed sole proprietors with no hired employees.
3. **Complete Control** The sole proprietor is the boss, with complete authority over all business decisions, such as what to produce and how to produce it.
4. **Owner Keeps All Profit** The sole proprietor does not have to share profits with anyone.
5. **Lower Taxes** Any profit generated by a sole proprietorship is taxed only once, as the owner's personal income. As you will learn later, corporate profit is taxed twice.
6. **Pride of Ownership** Creating a successful business and watching it grow can provide a sole proprietor tremendous personal pride and satisfaction.

Disadvantages of Sole Proprietorships

There are also some significant disadvantages of sole proprietorships, when compared to other forms of business.

1. **Unlimited Personal Liability** A sole proprietor faces unlimited personal liability for any business loss. **Liability** is the legal obligation to pay any debts of the business. Sole proprietors are personally responsible for paying all their business debts. If the business goes bankrupt or is sued, the owner is personally responsible. To pay off debts, the sole proprietor may have to draw from personal savings or sell personal assets, such as a home or automobile.
2. **Difficulty Raising Financial Capital** Because the sole proprietor has no partners or other financial backers, raising enough money to get the business going can be a problem. Banks are reluctant to lend money to a new business with no track record and few assets. Even a sole proprietorship that's been around for a while may still seem risky to lenders.
3. **Limited Life** With a sole proprietorship, the business and the owner are one and the same. The business ends when the owner dies or leaves the business. The firm's assets can be sold or turned over to someone else, who may restart the business. The result is a new firm with new ownership.
4. **Difficulty Finding and Keeping Good Workers** Because of its lack of permanence and difficulty raising financial capital, sole proprietors have trouble offering workers the job security and opportunity for advancement available in larger businesses. Therefore, a sole proprietorship may have difficulty



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Do you think the advantages of organizing a business as a sole proprietorship outweigh the disadvantages? Why or why not?

liability
The legal obligation to pay any debts of the business

attracting and retaining talented employees.

5. **Broad Responsiblity** Sole proprietors shoulder a great deal of responsibility. They usually must manage the firm, maintain financial records, oversee production, market the product, keep up with competition, and perform dozens of other tasks. It is not likely that one person can do all of these things well. However, young firms typically cannot afford to hire experts to carry out each of these functions. This broad responsibility may lead to long work days—and a lot of stress—for the sole proprietor.

✓ CHECKPOINT

What are the advantages and disadvantages of sole proprietorships?

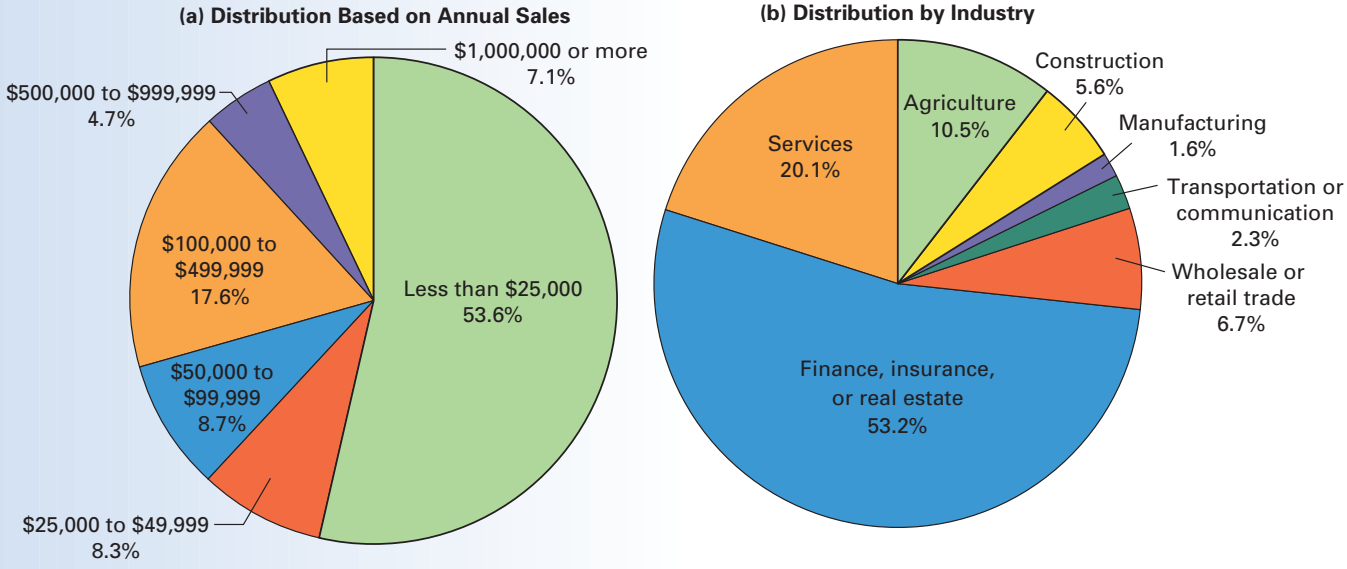
Partnerships

partnership
Two or more people agree to contribute resources to the business in return for a share of the profit

Another relatively simple form of business organization is the **partnership**, which involves two or more individuals who agree to contribute resources to the business in return for a share of any profit or loss. A partnership sometimes consists of one person who is talented at running the business and one or more who supply the money needed to get the business going. There are a little more than 2 million partnerships in the United States. They account for about 8 percent of all businesses and about 12 percent of all business sales.

Law, accounting, real estate, and medical partnerships typify this business form. Figure 8.3 shows the distribution of partnerships by annual revenue in pie chart (a) and by industry in pie chart (b). More than half of all partnerships had annual sales of less

Distribution of Partnerships Based on Annual Sales and Industry **Figure 8.3**



Most partnerships had annual sales of less than $25,000. More than half of all partnerships are in finance, insurance, or real estate.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726, 727, and 795.

than $25,000. Only 7.1 percent had sales of $1 million or more. More than half of all partnerships are in finance, insurance, or real estate. Though not shown in the pie chart, real-estate firms alone account for about 42 percent of all partnerships.

Types of Partnerships

There are two broad types of partnerships: general partnerships and limited partnerships. Each divides responsibilities and liabilities differently.

GENERAL PARTNERSHIPS

The most common type of partnership is the **general partnership**, where partners share both in the responsibility for running the business and in any liability from its operation. Professional groups such as doctors, lawyers, and accountants often form general partnerships.

LIMITED PARTNERSHIPS

With a **limited partnership**, at least one partner is required to be a general partner. General partners manage the business and have unlimited personal liability for the partnership. The other partners don't manage the business. Their contribution is strictly financial. The most they can lose is the amount they invested in the firm. For example, limited partners put up most of the money for a general partner to buy land, divide it into housing lots, build homes on those lots, and then sell the homes. Because their liability is limited, they are called *limited* partners. A limited partnership can have any number of limited partners.

Advantages of Partnerships

Partnerships offer several advantages.

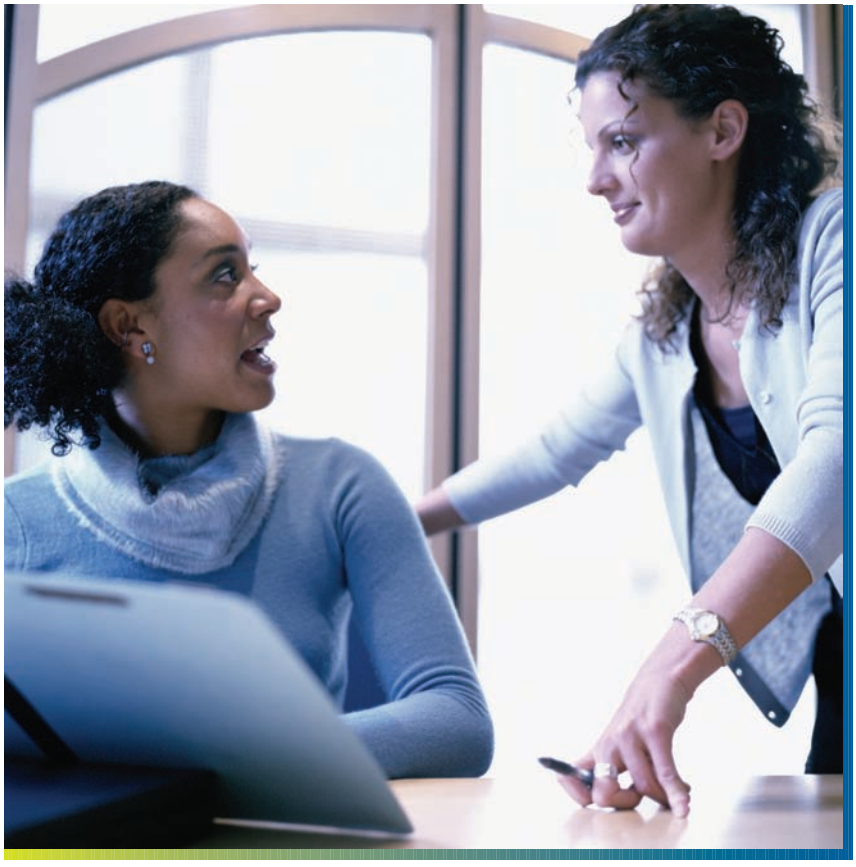
1. **Easy to Start** As with the sole proprietorship, partnerships are easy to start. The partners need only agree on how to share business responsibilities, profits, and losses. Some partnerships are formed with articles of partnership, a legal agreement spelling out each partner's rights and responsibilities. In most states, partnerships that do not have their own agreement are gov-

general partnership

Partners share both in the responsibility of running the business and in any liability from its operation

limited partnership

At least one general partner runs the business and bears unlimited personal liability; other partners provide financial capital but have limited liability



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In a general partnership with two partners, both are responsible for running the business and for any liability that results from its operation. If you were to start a business, would you rather be a partner or a sole proprietor? Give reasons for your answer.

erned by the Uniform Partnership Act (UPA), which established partnership rules.

2. **Few Government Regulations** Once the partnership has begun operating, it faces relatively few government regulations. Like the sole proprietorship, the partnership must maintain accurate tax records and comply with employment laws.

3. **Shared Decision Making and Increased Specialization** A sole proprietor makes all key business decisions. But general partners usually share decision-making responsibilities. On average there were about 7 partners per partnership in 2004. By discussing important decisions, partners may make better decisions than a sole proprietor could make alone. By relying on the different skills of each partner, general partnerships also may be more efficient than sole proprietors. For example, one partner may be good at dealing with the public while another excels at record keeping and paperwork.

4. **Greater Ability to Raise Financial Capital** Partnerships often find it easier than sole proprietors to raise the financial capital needed to get a business going. First, the partners themselves can come up with money from their own sources, such as a savings account. Second, banks may be more willing to lend money to a partnership than to a sole proprietor. With a partnership, the loans are backed by the promise and property of each general partner.

5. **More Able to Attract and Retain Workers** Compared to sole proprietors, partnerships offer employees more opportunities for advancement. For example, a partnership can make a key employee, such as a promising lawyer or accountant, a partner. A partnership typically is more able to attract and retain talented workers than is a sole proprietorship.

6. **Lower Taxes** Partners pay personal income taxes on their partnership income. The partnership itself does not have to pay a separate tax, as does a corporation.

Disadvantages of Partnerships

There also are disadvantages to partnerships. Some of these drawbacks are the same as for sole proprietorships.

1. **Unlimited Personal Liability** In a general partnership, each partner is personally responsible for paying business debts. If the business fails or is sued, the partners may have to draw from personal savings or sell personal assets, such as a home, to pay debts. This means one partner could lose everything because of another's blunder. In a limited partnership, the limited partners have less liability than the general partners. Their liability for the firm's debts and losses is limited to the amount of capital they have invested.

2. **Limited Life of the Business** A partnership has no life of its own, independent of the partners. The partnership ends when one partner dies or leaves the business. A new partnership can be formed to continue the business, but the transition could be tricky. A partnership might end even if remaining partners would like it to continue.



Organize the class into small teams. Your team is starting a general partnership. Decide the type of business your team's partnership will run. Then decide the area of responsibility each team member will handle. Match each member's strengths and interests with the tasks to be done.

3. **Partners May Disagree** Partners may not always agree on important decisions. Unlike a sole proprietorship, where the one owner makes all the decisions, partners must reach a consensus. Disagreements and disputes may hamper operations and could end the partnership.

4. **Profits Must Be Shared** Partners must share any profits according to the original partnership agreement. This may seem unfair to a partner who accounts for most of the profit. Unless the sharing agreement is revised, the most productive partner may look for a better deal elsewhere. This could end the partnership. Some major law partnerships have dissolved recently because of this.

✓ CHECKPOINT

What are the advantages and disadvantages of the partnership form of business?



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Partners may not always agree on all business matters. What advice do you have for potential partners to help them avoid arguments?

e-conomics

SOFTWARE FOR BUSINESS STARTUPS

Planning on starting a business? Be it a sole proprietorship, partnership, or corporation, the breadth and complexity of the issues involved may overwhelm you. Making the wrong move early on can cost you lost time and money, and perhaps even failure. Now there is business start-up software available that greatly reduces the headaches of starting a business, thus allowing a new business owner to focus on the bottom line. The software costs as little as $50 and is available immediately in the form of a download from the Internet. These business start-up kits include software to help write successful business plans, prepare legal documents and take effective legal actions, perform bookkeeping and accounting chores, generate necessary reports, plan for e-marketing, buy and lease real estate, and take care of the owner's personal finances.

THINK CRITICALLY

Do you see any problems in choosing and using these kits? If so, describe them.

Sources: businesskit.com: www.mybusinesskit.com/completebuskit.htm; bplans.com: www.bplans.com/st/; Ronin Software: www.roninsoft.com/sitemap1.htm

Xtra! Study tools
thomsonedu.com/school/econxtra

Key Concepts

1. Why are more restaurants organized as sole proprietorships than are industrial construction firms?
2. Why do some sole proprietorships become less efficient as they grow?
3. Why are many sole proprietorships run by part-time owners who earn most of their income as employees elsewhere?
4. Why do most partnerships last for only a few years or less?
5. Why do many new lawyers seek to become partners in established law firms?

Graphing Exercise

6. In 2002 all U.S. partnerships had a total of $2.7 trillion in sales. The federal government classified partnerships into 19 categories. However, the bulk of the sales were made by partnerships in seven of the federal classifications, as listed in the table below. Use the data in this table to construct a pie graph showing partnerships' sales. Why do you think some types of businesses lend themselves to being organized as partnerships?

Gross Sales by Partnerships in 2002
Values in billions of dollars

Business Classification	Sales	Percent of Total
Manufacturing	$485	18.2%
Finance and insurance	$316	11.8%
Retail trade	$281	10.5%
Professional, scientific, and technical services	$218	8.2%
Wholesale trade	$257	9.6%
Real estate and rental and leasing	$168	6.3%
Construction	$170	6.4%
All other	$774	29.0%

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, p. 506.

Think Critically

7. **Management** Make a list of all the management functions a sole proprietor must perform to be successful. What types of courses should a person who wants to own a business take? What types of experience should such a person look for in a job he or she might work in while going to school?
8. **Research** Review listings for physicians in your local Yellow Pages. How many of them are partners in a group and how many of them practice independently? Why do you think so many physicians prefer to participate in partnerships with other physicians?

8.3 Corporations and Other Organizations

Objectives

- Describe how a corporation is established.
- Understand why the corporate form is favored by large businesses.
- Recognize other types of organizations businesspeople use to accomplish their goals.

Overview

Sole proprietorships and partnerships may suit small businesses, but they are not appropriate for larger, more complex businesses. Larger businesses need a more flexible organization that allows the firm to raise sufficient financial capital and cope with a changing business environment. The corporation is the favored type of organization for large businesses. For special purposes, businesspeople may choose to organize as a limited liability company, limited liability partnership, cooperative, or not-for-profit organization.

Key Terms

corporation

articles of incorporation

private corporation

publicly traded corporation

S corporation

limited liability company (LLC)

limited liability partnership (LLP)

cooperative

not-for-profit organizations

In the News

Open Season on CEOs

The widespread corporate scandals shaking the United States have corporate CEOs (Chief Executive Officers) feeling less than proud of their titles. "Clearly it's open season on CEOs," said the CEO of Ford Motor Company. "But the broad brush with which everyone is tainted isn't really justified." Most CEOs resent having to spend time defending their reputations and distancing themselves from the ugly shadow cast by executives at Enron, WorldCom, and other companies. Most assert that their companies' accounting records are accurate and that their employees are honest and ethical. They're angry that the negative attitudes towards corporate America are undermining their companies' reputations, stock prices, and overall value. Congress is calling for more independent directors on corporate boards. Congress also is asking for closer scrutiny of the hiring and firing of CEOs—including their salaries, bonuses, expense accounts, and termination packages.

THINK ABOUT IT

Do you think the public outrage against CEOs is justified? Do CEOs who receive multimillion dollar salaries deserve to earn that much money? Why or why not?

Source: James F. Peltz, *Los Angeles Times*, "CEOs Upset Over Reputations," *Las Vegas Review Journal*, July 19, 2003.

Incorporating

corporation
A legal entity with an existence that is distinct from the people who organize, own, and run it

articles of incorporation
A written application to the state seeking permission to form a corporation

By far the most influential and most complex form of business organization is the corporation. A **corporation** is a legal entity with an existence that is distinct from the people who organize it, own it, and run it. The corporation can earn a profit, lose money, be sued, and even be found guilty of a crime.

There are about five million corporations in the United States, accounting for 18.7 percent of all businesses. Because they tend to be much larger than the other two business types, corporations account for 83.6 percent of all business sales. Figure 8.4 summarizes the share of businesses by each of the three types of business organization and the share of sales by each type. Even though sole proprietors represent the largest share of businesses by type, corporations are much more important based on business sales.

Figure 8.5 shows the distribution of corporations based on sales and on the industry. Whereas the median-sized sole proprietorship or partnership had annual sales of less than $25,000, the median-sized corporation had sales of $100,000 to $499,999. Virtually all the nation's large businesses are corporations. Compared with the other types of businesses, a smaller share of corporations is in agriculture and a larger share is in manufacturing.

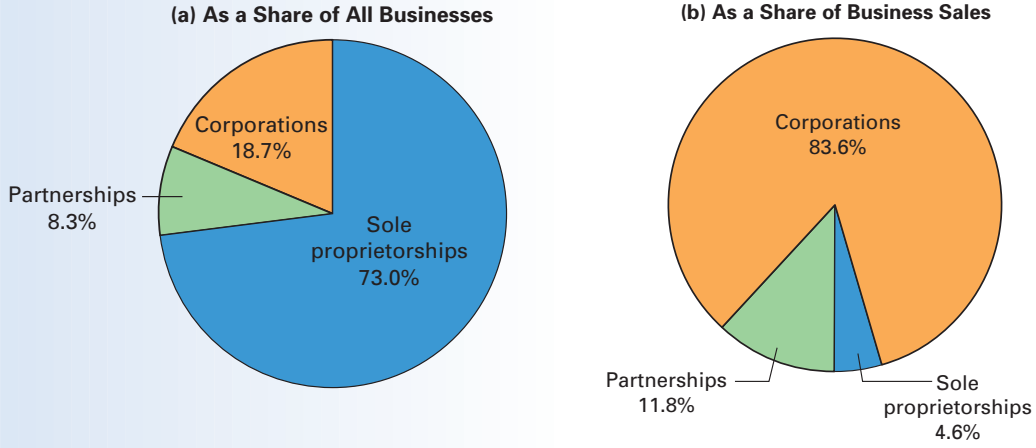
Articles of Incorporation

A corporation is established through **articles of incorporation**, a written application to a state seeking permission to form a corporation. If these articles comply with state and federal laws, a charter is issued and the corporation becomes a legal entity. A *charter* offers the legal authorization to organize a business as a corporation.

A board of directors is elected by stockholders to oversee the firm's operation. The board sets corporate goals and decides major policy issues, and it appoints and sets salaries of top officers. Day-to-day duties of running the business are delegated to the corporate executives the board hires.

The owners of a corporation are issued *shares of stock,* entitling them to corporate profits and to vote for members of the board of directors and on various other issues in proportion to their stock ownership. For example, a stockholder who owns 1 percent of the stock has a right to 1 percent of the firm's profit paid in dividends and can vote 1 percent of the shares. *Dividends* are a share of a corporation's profits paid to its stockholders.

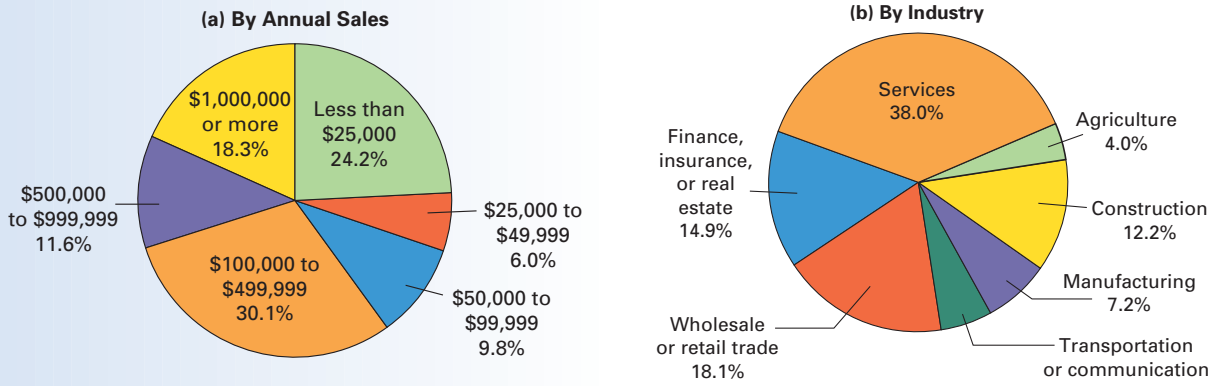
Comparing Corporations with Sole Proprietorships and Partnerships — **Figure 8.4**



Sole proprietorships account for nearly three-quarters of all U.S. businesses, but corporations account for most business sales.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States*, 2006, Table 725.

Distribution of Corporations by Annual Sales and by Industry — **Figure 8.5**



Nearly one in five corporations had annual sales of $1 million or more. Nearly four in ten corporations are in services, such as health care.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726 and 727.

Types of Corporations

A **private corporation** issues stock to just a few people, sometimes only family members. Such stockholders rarely sell their stock. Instead they pass it on within the family. Private corporations account for the overwhelming share of corporations in the United States.

In contrast, a **publicly traded corporation** has many shareholders—sometimes numbering in the millions—who can buy or sell shares. Stocks are bought and sold in financial markets called stock exchanges. You will read more about these in a later chapter.

By any measure of size, whether it be sales or employment, publicly traded corporations are larger than private corporations. Publicly traded corporations account for less than 1 percent of all corporations.

✓ CHECKPOINT

How is a corporation established?

Advantages and Disadvantages

Here are the advantages and disadvantages of establishing of corporation.

Advantages of Incorporation

The corporate form offers advantages to the stockholders and to the business itself.

1. **Easier to Raise Financial Capital** The corporate form is the most effective structure for raising financial capital. This is especially true if large sums are needed to start or expand a business. Many investors—hundreds, thousands, even millions—can exchange their money for company shares, giving the firm a huge pool of funds. Corporations have more ways to raise money than either sole proprietors or partnerships.
2. **Limited Liability** In most cases, stockholders, the owners of the corporation, are responsible for the firm's debts only up to the amount they paid for their shares. Stockholders are said to have limited liability. Their personal assets cannot be seized to pay the debts of the business. Use of the abbreviations "Inc." or "Corp." in the company name serves as a warning that stockholders will not accept personal liability for corporate debts.
3. **Unlimited Life** Unlike sole proprietorships and partnerships, a corporation does not cease to exist if a major stockholder dies or leaves the business. In fact, even if all stockholders die, the shares would pass on to heirs and the corporation would continue. Because

private corporation

Ownership limited to just a few people, sometimes only family members; shares are not publicly traded

publicly traded corporation

Owned by many shareholders; shares can be bought or sold on stock exchanges

stock is transferable—that is, it can be bought and sold or given to someone else—a corporation can exist indefinitely, independently of its owners.

4. **Specialized Management** In sole proprietorships and general partnerships, the firms' owners and managers often are one and the same. Therefore, owners usually must possess management skills. However, the owners of a corporation—the stockholders—need no special management skills. Because ownership is separated from management, a corporation can hire experts to run the firm.

Disadvantages of Incorporation

The U.S. economy depends heavily on the corporate form. However, this business type also has some disadvantages when compared to sole proprietors and partnerships.

1. **Difficult and Costly to Start** Compared to the two other business forms, a corporation is more complicated to start. Articles of incorporation can be difficult and costly to draw up and get approved by government.
2. **More Regulated** Corporations, especially those publicly traded, face more regulations and red tape than other forms of business. For example, publicly traded corporations must issue financial reports every three months and issue annual reports prepared by an outside accounting firm. These reports must be made public and filed with the Securities and Exchange Commission (SEC), a federal agency that regulates trading of corporate stocks.
3. **Owners Have Less Control** Owners of a large, publicly traded corporation usually are far removed from the day-to-day operations of the business. The firm's owners have little direct control over the firm they own. Professional managers run the business, but they may not always act in the owners' best interests, as evidenced by some management failures in large corporations such as Enron and WorldCom.
4. **Double Taxation** In the eyes of the law, a corporation is a legal entity separate from its owners. The corporation therefore pays taxes on any earnings. Stockholders must then pay personal income taxes on any earnings they receive from the corporation. Thus, each dollar of corporate earnings gets taxed twice—first by the corporate income tax and then by the personal income tax.

S corporation
Organization that offers limited liability combined with the single taxation of business income; must have no more than 100 stockholders and no foreign stockholders

✓ CHECKPOINT

Why is the corporation the preferred business form for large businesses?

Other Organizations

So far you have considered the three basic business forms: sole proprietorships, partnerships, and corporations. Other ways of doing business have developed that combine attractive features of the basic forms.

Hybrid Businesses

A big advantage of sole proprietorships and partnerships is that business earnings are taxed only once—as income to the business owners. A big advantage of the corporation is that all owners are protected by limited liability. Some new business hybrids have developed that offer the protection of limited liability while avoiding the double taxation of business income. Here are the most important new business types.

S CORPORATION

The **S corporation** was introduced about 25 years ago to combine the limited liability protection of the corporate form with the single taxation feature of a partnership. To qualify as an S corporation, a business must be incorporated in the United States, must have no more than 100 stockholders, and must have no foreign stockholders. Because of these restrictions, S corporations tend to be smaller than other corporations. About half of all U.S. corporations are S corporations.

ETHICS IN ACTION

Fulfilling Corporate Responsibility

Corporations, especially major ones, often face the ethical challenge of fulfilling the expectations of the groups upon which the corporation has an impact. In addition to shareholders and consumers, these groups include communities affected by the corporate presence, labor, retirees, environmental groups, and government officials. Consumers, shareholders, and many other groups all may at some point demand that a business conduct itself responsibly regarding a specific issue. For example, a consumer group might demand that a corporation remove a defective product from the market. One way some corporations try to include the voice of such groups is through representation on the corporate board of directors. How might such a representative board be put together? In selecting potential boards, analysts urge that directors be independent of the corporation, as their impartial input helps management see the bigger picture. Also, constructive dissent should be encouraged along with teamwork and consensus building. Finally, would-be directors should be offered sufficient compensation so they can devote the time needed to understand the important corporate issues before the board.

THINK CRITICALLY

Would having a diversified and representative board assure that the corporation fulfills its responsibilities, especially to the owners of the corporation? Why or why not?

Sources: Michael Baker, "Strong Board Is Vital," *Birmingham Business Journal*, May 4, 2006; Julie Daum and Tom Neff, "Changes at the Top," Spencer Stuart (executive search firm) web site: www.spencerstuart.com/research/boards/583/, August 2003.

LIMITED LIABILITY COMPANY (LLC)

Like an S corporation, a **limited liability company (LLC)** combines the limited liability feature of the corporation with the single-tax provisions of a partnership. Company owners are called members, not partners or shareholders. An LLC does not have the ownership restrictions of the S corporation, making it ideal for a business with foreign investors. An LLC must have at least two members, and a member can personally guarantee certain obligations of the LLC. This gives a new business more financial flexibility. For example, a prospective landlord about to lease office space to a new business most likely would require a personal guarantee from a business owner. The LLC structure would allow one or more company members to make such a guarantee. Because of its more flexible management structure, the LLC has become a common way to own and operate a business.

LIMITED LIABILITY PARTNERSHIP (LLP)

An existing partnership may find it difficult to convert to an LLC. This is the reason the **limited liability partnership (LLP)**, a newer type of organization, was created. An LLP has the advantages of an LLC and is easier to establish, especially if a business needs to convert from a regular partnership. An existing partnership usually can be converted to an LLP simply by changing the partnership agreement and registering as an LLP. Both LLPs and LLCs are taxed as partnerships. The limited liability partnership differs from the limited partnership in that members of the LLP can take an active role in the business without exposing themselves to personal liability for the acts of others (except to the extent of their investment in the LLP).

Cooperatives

A **cooperative** is a group of people who pool their resources to buy and sell more

limited liability company (LLC)

Business with limited liability for some owners, single taxation of business income, and no ownership restrictions

limited liability partnership (LLP)

Like a limited liability company but more easily converted from an existing partnership

cooperative

An organization consisting of people who pool their resources to buy and sell more efficiently than they could independently

NETBookmark

LLPs are governed by the Revised Uniform Partnership Act (RUPA). Access the text of this Act through thomsonedu.com/school/econxtra. The LLP amendments to RUPA deal with four major issues. List these issues, and write a sentence summarizing each one.

thomsonedu.com/school/econxtra

Investigate Your Local ECONOMY

Identify a not-for-profit organization in your area. Research to discover how this organization affects your local economy. For example, find out what services the organization provides and how many paid employees and volunteers work for the organization. Share your findings in class.

efficiently than they could independently. The government grants most cooperatives tax-exempt status. There are two types: consumer cooperatives and producer cooperatives.

CONSUMER COOPERATIVE

A *consumer cooperative* is a retail business owned and operated by some or all of its customers in order to reduce costs. Some cooperatives require members to pay an annual fee and others require them to work a certain number of hours each year. Members sometimes pay lower prices than other customers or may share in any revenues that exceed costs. In the United States, consumer cooperatives operate credit unions, electric-power facilities, health plans, and grocery stores, among others. Many college bookstores are cooperatives.

PRODUCER COOPERATIVE

In a *producer cooperative,* producers join forces to buy supplies and equipment and to market their output. Each producer's objective is to reduce costs and increase profits. For example, farmers pool their funds to purchase machinery and supplies. Farm cooperatives also provide storage facilities, processing, and transportation to market, thereby eliminating wholesalers. Federal legislation allows farmers to cooperate in this way without violating antitrust laws. Firms in other industries could not do this legally.

Not-for-Profit Organizations

So far, you have learned about organizations that try to maximize profits or, in the case of cooperatives, minimize costs. Some organizations have neither as a goal. **Not-for-profit organizations** engage in charitable, educational, humanitarian, cultural, professional, and other activities, often with a social purpose. Government agencies do not have profit as a goal either, but governments are not included in this definition of not-for-profit organizations.

not-for-profit organizations
Groups that do not pursue profit as a goal; they engage in charitable, educational, humanitarian, cultural, professional, or other activities, often with a social purpose

Like businesses, not-for-profit organizations evolved to help people accomplish their goals. Examples include nonprofit hospitals, private schools and colleges, religious organizations, the Red Cross, charitable foundations, orchestras, museums, labor unions, and professional organizations such as the National Education Association. There are about 1.4 million not-for-profit organizations in the United States. They employ about 10 million workers, with hospitals accounting for about half this total.

Even not-for-profit organizations must somehow pay the bills. Revenues typically include some combination of voluntary contributions and service charges, such as college tuition and hospital charges. In the United States, not-for-profit organizations usually are exempt from taxes.

✓ CHECKPOINT

Name and describe other types of organizations businesspeople may choose.

Assessment 8.3

Key Concepts

1. Why would most people refuse to invest in corporations if there were no limited liability for stock owners?
2. Why might a family business organize as a private corporation rather than as a sole proprietorship?
3. Although stockholders do not need to be professional managers, they should remain aware of decisions made by the people who run the firm. Why is this true?
4. If publicly traded corporations account for only 1 percent of all corporations, why should society care what they do?
5. Identify a local not-for-profit organization that operates in your community. In what ways is this firm different from other businesses?

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Graphing Exercise

6. In the years between 2000 and 2004, many publicly held corporations in the United States reported large and growing profits. Although some of their profits were paid to stockholders in dividends, a large part was kept as retained earnings. Use the data in the table to construct a double line graph that shows the change in corporate profits and dividends in these years. Why do you think these firms chose not to pay a larger share of their profits in dividends?

Corporate After-Tax Profits and Dividends, 2000–2004
Values in billions of dollars

Year	After-Tax Profits	Dividends	Dividends as a Percent of After-Tax Profits
2000	$553	$378	63.4%
2001	$563	$371	65.9%
2002	$691	$390	60.8%
2003	$786	$395	50.3%
2004	$912	$469	51.4%

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, p. 527.

Think Critically

7. **History** Investigate the history of a major U.S. corporation. How did it begin? What factors led to its growth? What impact has it had on the lives of American consumers?

Sharpen Your Skills



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Draw Conclusions

In drawing a conclusion, you first must gather information about the issue at hand. Then you must consider all aspects of the information before reaching your conclusion. Consider Rita, who for many years has made glass Christmas ornaments for her friends and relatives. Everyone who has received one of Rita's ornaments has been thrilled. She has decided to go into business manufacturing and selling ornaments.

Rita has asked you to help her translate her ideas into a successful business. Here's the information she has gathered so far. The materials in each ornament cost $1.00, and it takes 20 minutes to produce one by hand. In addition, Rita has determined that she will need to do the following:

- Invest $10,000 in equipment and supplies and have $40,000 to cover her costs until her products begin to sell
- Hire and train one full-time or two part-time employees
- Manufacture and sell 12,000 ornaments each year
- Receive $9 for each ornament
- Keep track of the business's income and expenditures

Apply Your Skill

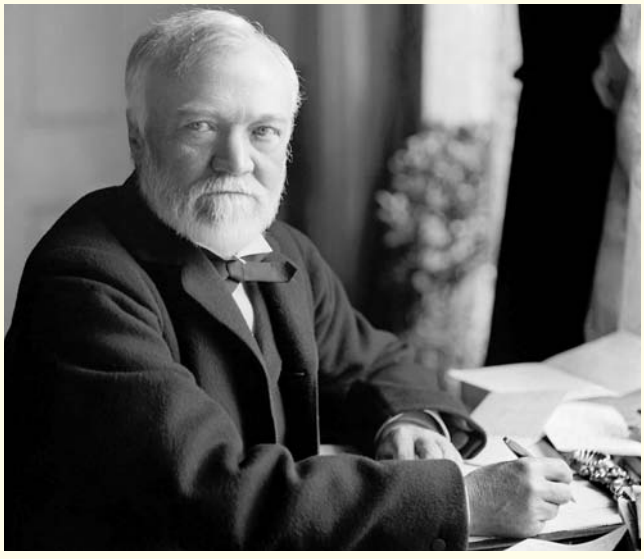
1. Rita has $25,000 to invest in the business. How much more does she need to start her business? What method would you advise her to use to raise the rest of the money? Explain the reasons for your advice.
2. Rita doesn't know very much about marketing. Should she hire someone to market her ornaments and pay that person a 25 percent commission? Or, should she try to convince a mail-order firm to sell her ornaments. If she makes this choice, the firm will keep half the revenue from her sales. How much would she have to charge for each ornament in these two situations in order to receive $9 for each item?
3. What sort of organization should Rita use to start her business—a sole proprietorship, a partnership, or a corporation? Explain the reasons for your choice.

CONNECT TO HISTORY



Andrew Carnegie—Entrepreneur and Philanthropist

When he was 12, Andrew Carnegie moved with his family from Scotland to the United States. Soon after arriving in this country, he got a job working in a cotton mill for $1.20 a week. At age 18, he took a job as a telegrapher for the Pennsylvania Railroad. While working there, he won the favor of Thomas A. Scott, a top official in the company. With Scott's help, Carnegie rose quickly through the company ranks. By age 24, he had become the superintendent of the western division of the railroad. He invested much of his earnings in stocks.



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By age 30, Carnegie was earning $50,000 a year—a fortune at the time—and turned all his efforts and investments to the steel industry. This industry would make him the richest man in America. He believed that the new Bessemer process would cause the industry to grow. He hired good managers and plowed the profits back into his companies. He used what he learned from his railroad experience to lower costs and keep prices low. By controlling costs and reinvesting profits, he was able to take advantage of economies of scale. Smaller companies unable to undertake all the phases of production were at a disadvantage. He was able to increase his market share and expand his holdings. Carnegie purchased iron ore deposits and coke fields. Adding these to his steel mills, ships, and railroads, Carnegie was able to control the entire steel-making process, from ore to finished products.

When he sold his company to J.P. Morgan in 1901, Carnegie received $250 million—worth $4.5 billion today. He then set out to give away most of his fortune. Carnegie wrote in an essay for the *American Review* that the man who dies rich, dies disgraced. Although at his death in 1919 he was worth more than $22 million, Carnegie did not die disgraced. He had given away 90 percent of his fortune—$350 million—to libraries, concert halls, and other public institutions across the nation and the world.

THINK CRITICALLY

Research the life of another successful American entrepreneur. What were the keys to his or her success, and what lessons can be learned from that success?

8 Chapter Assessment

Summary

8.1 Entrepreneurs

a *Entrepreneurs* are the prime movers in our market economy. They bring about creative change through their effort to earn profits.

b Entrepreneurs take risks when they operate businesses. They must obtain and risk *financial capital* to get their businesses off the ground. When entrepreneurs are successful, their success attracts other entrepreneurs to the same type of production. This creates competition that improves the quality of products and lowers prices for consumers.

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thomsonedu.com/school/econxtra

c Not all businesspeople are entrepreneurs. Many employees are paid to be innovative or to manage businesses. If they are not risking their own funds, they are not entrepreneurs. Stockholders usually are not entrepreneurs because they do not dream up the innovative idea and do not generally participate in day-to-day management.

8.2 Sole Proprietorships and Partnerships

a The three basic types of business organization in the United States are sole proprietorships, partnerships, and corporations.

b *Sole proprietorships* are the most common type of business organization. A sole proprietorship is owned by a single person who is totally responsible for its operation, receives all of its profits, or incurs all its losses. This business exists only as long as the owner runs it. Sole proprietorships are relatively easy to start, enjoy a lower level of government regulation, and are taxed only once on the profits they earn.

c *General partnerships* are created when two or more owners form a business by agreeing to share responsibilities for the firm and any resulting profits or losses. *Limited partnerships* are formed when at least one owner is a general partner and other owners contribute funds to become limited partners.

d Partnerships also are relatively easy to start, and general partners have unlimited *liability* for the debts of the firm. Partnerships are better able to raise financial capital than sole proprietorships, and their profits are taxed only once. The lives of partnerships are limited to the involvement of the partners.

8.3 Corporations and Other Organizations

a *Corporations* are able to raise large amounts of financial capital by selling stock. Almost all large firms in the United States are corporations. They may either be private or publicly traded. *Private corporations* issue stock to a limited number of people, who often are members of a family and the stock usually remains in the family. *Publicly traded corporations* raise funds by selling stock to anyone who is willing to buy it. Stockholders receive a vote for each share owned for important business decisions that are made. They also have a claim to a share of the firm's profits.

b Corporations are established through *articles of incorporation.* Corporations are legal entities separate from the individual owners of their stock. The owners of corporate stock enjoy limited liability. They risk no more than the funds they use to purchase stock. Corporations have unlimited life. If a shareholder dies, the stock is sold or given to others. The status of the corporation is unaffected.

c Corporations are more difficult and costly to start than other forms of business organizations. They are more closely regulated by the government, and their profits are taxed twice—once when they are earned by the firm and again when they are paid to the stockholders in dividends or when shareholders gain by selling shares.

d Some special forms of business organizations are called hybrid businesses. These include *S corporations, limited liability companies,* and *limited liability partnerships.* Other ways of organizing production that help people accomplish their goals include *cooperatives* and *not-for-profit organizations.* Each of these forms of organization was created to fill the specific needs of a particular group of people.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The process of turning an invention into a marketable product

_____ **2.** Two or more people agree to contribute resources to a business in return for a share of the profit

_____ **3.** Ownership is limited to just a few people, sometimes only family members; shares are not publicly traded

_____ **4.** An organization consisting of people who pool their resources to buy or sell more efficiently than they could independently

_____ **5.** The legal obligation to pay any debts of a business

_____ **6.** The simplest form of business organization; a firm that is owned and run by one person

_____ **7.** A legal entity with an existence that is distinct from the people who organize, own, and run it

_____ **8.** Owned by many shareholders; shares can be bought and sold

_____ **9.** Limited liability combined with the single taxation of business income; must have no more than 100 stockholders and no foreign stockholders

_____**10.** Money needed to start or expand a business

_____**11.** Partners share both in the responsibility of running the business and in any liability from its operation

_____**12.** At least one general partner runs the business and bears unlimited personal liability; other partners provide financial capital but have limited liability

_____**13.** A written application to the state seeking permission to form a corporation

_____**14.** Business with limited liability for some owners, single taxation of business income, and no ownership restriction

_____**15.** Groups that do not pursue profit as a goal and often engage in activities with a social purpose

a. articles of incorporation
b. cooperative
c. corporation
d. financial capital
e. general partnership
f. innovation
g. liability
h. limited liability company (LLC)
i. limited liablility partnership (LLP)
j. limited partnership
k. not-for-profit organization
l. partnership
m. private corporation
n. publicly traded corporation
o. S corporation
p. sole proprietorship

Review Economic Concepts

16. *Entrepreneurs* bring about creative change in each of the following ways *except*

a. they improve the quality of existing products.

b. they introduce new products.

c. they find ways to eliminate competition.

d. they introduce new production methods.

17. **True or False** Once established, most *entrepreneurs* are able to maintain a substantial profit margin on the products they produce and sell.

18. Competitors are attracted to a market that yields
    a. profit.
    b. unlimited liability.
    c. lower prices for consumers.
    d. higher tax revenues.

19. Which of the following examples demonstrates *entrepreneurship*?
    a. A scientist invents a long-lasting paint and sells it to a large manufacturer.
    b. A government official creates a new tax form that is easier to complete.
    c. A technician discovers a new type of wax that is used by the firm that employs her.
    d. A student cuts his elderly neighbor's lawn for free.

20. **True or False** Sole proprietorships are the most common form of business organization in the United States.

21. *Sole proprietors* enjoy each of the following advantages *except*
    a. they receive all the profit their businesses earn.
    b. it is easy for them to gather large amounts of financial capital.
    c. they can make business decisions quickly.
    d. it is easy for them to form their business.

22. Owners of *sole proprietorships* and *partners* both have __?__ for the firm's debts if the firm fails to pay its bills.

23. *Corporations* are
    a. the most common type of business organization.
    b. the easiest form of business to start.
    c. the type of business organization that is best able to raise financial capital.
    b. the least-regulated form of business organization.

24. **True or False** Most large businesses in the United States are *corporations*.

25. **True or False** A *corporation's* stockholders are held responsible to pay off all the firm's debts if the firm files for bankruptcy.

26. A *consumer cooperative* generally is formed to
    a. earn a profit for its owners.
    b. reduce costs of buying goods or services for its members.
    c. avoid paying income tax on its profits.
    d. limit the type of people who can shop at specific stores.

27. **True or False** Almost all corporations in the United States are *publicly traded corporations*.

28. Which of the following types of business organizations cannot have a foreign owner?
    a. S corporation
    b. limited liability company
    c. limited liability partnership
    d. not-for-profit organization

29. *Publicly traded corporations* must issue financial reports and file them with the __?__, a federal agency that regulates trading of corporate stocks.

30. **True or False** An important disadvantage of *corporations* is the fact that their profits are taxed twice.

31. Which of the following does not describe a disadvantage of a *corporation*?
    a. difficult to start
    b. less regulated
    c. owners have little control
    d. earnings are taxed twice

32. Which of the following is not true of *private corporations*?
    a. They exist to earn a profit.
    b. They must reorganize when an owner dies.
    c. Their income is taxed more than employee earnings.
    d. They are treated as an individual separate from their owners by the law.

33. **True or False** Use of the abbreviations "Inc." or "Corp." in a company name indicates that the owners are personally liable for the company's debts.

Apply Economic Concepts

34. **Entrepreneurship** Gretchen has invented a new lubricant that reduces friction between moving parts in an engine to almost nothing. This product should increase automobile gas mileage by at least 50 percent and make automobile engines last almost forever. Explain how Gretchen could become an entrepreneur through her invention.

35. **Assess Limitations of Sole Proprietorships** Paul opened a florist business that marketed tropical flowers as a sole proprietorship. His idea was that by offering flowers that no other local store sold, he could charge high prices and earn a good profit. This may have been a good idea, but his business failed. First, he had only $30,000 to get started, so he was never able to keep many flowers in stock. Although he knew flowers, he didn't know much about advertising, accounting, or how to direct employees. Even when he put in 80-hour weeks, things didn't get done on time. When the business failed, he owed $40,000. The bankruptcy court took his house and car to pay his debts. Explain why Paul's business might have been more successful if it had been organized as a corporation or even a partnership.

36. **Limited Liability** Gretchen has successfully tested her lubricant on small engines. She has not tried to use it in large engines or for extended periods of time. To complete these tests, she needs many thousands of dollars to buy equipment and run the tests. If the tests are successful, Gretchen thinks her product could earn many millions of dollars in profit every year. If they fail, all the funds invested in the tests could be lost. Why would Gretchen want to limit her liability when she starts her business?

37. **Forms of Business Organization** Identify the type of business organization Gretchen should form to be able to produce and market 10,000,000 gallons of her lubricant each year.

38. **Sharpen Your Skills: Draw Conclusions** After five years, Rita's business has become very successful. Her annual sales have reached $450,000 and she employs three full-time workers. She is convinced she could double her sales if she employed three more workers and spent $500,000 to purchase additional equipment. Rita has saved only $100,000 that she could invest. She spends almost all of her time working. She never takes a day off, and still, some orders can't be filled on time. Rita has come to you for advice. Her business is still organized as it was when she started out. (See your answer to Question 3 for *Sharpen Your Skills* on page 244.) What are the issues and the possible solutions? What would you advise Rita to do?



39. Access **EconLinks Online** through thomsonedu.com/school/econxtra. In the Government listing, click on "Federal Independent Agencies and Organizations." Then click on the link to the Securities and Exchange Commission web site. Under "About the SEC," click on "Laws and Regulations." Read the information about the Sarbanes-Oxley Act of 2002. Write a paragraph explaining the purpose of this Act.

9 Labor Markets

9.1 Demand and Supply of Resources

9.2 Wage Determination

9.3 Labor Unions



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CONSIDER

Why do truck drivers in the United States earn at least 20 times more than rickshaw drivers in Asia?

Why do some professional basketball players earn 50 times more than others?

Among physicians, why do surgeons earn twice as much as general practitioners?

What's the payoff for a college education?

In what sense have labor unions become victims of their own success?

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9.1 Demand and Supply of Resources

Objectives

- Determine the shapes of a resource demand curve and a resource supply curve.
- Identify what can shift a labor demand curve.
- Identify what can shift a labor supply curve.

Overview

As with all prices, the prices of productive resources—the inputs used to produce goods and services—are determined by the interaction of demand and supply. Demand and supply in resource markets determine the price and quantity of resources employed. The distribution of resource ownership determines the distribution of income throughout the economy. Your earnings will depend on the market value of the resources you supply. In deciding on a career—the labor market in which you will work—you should consider the income you could expect from alternative occupations.

Key Terms

derived demand

productivity

equilibrium wage

resource substitutes

resource complements

In the News

Productivity in the U.S. Service Sector

In the late 1990s increases in U.S. productivity (average output per hour per worker) were driven by the technology sector. Led by companies like Microsoft, Dell, and Intel, technology industries, such as telecommunications and computer and semiconductor manufacturing, accounted for nearly all of the country's increased productivity. During that period, productivity increased at an annual rate of 2.5 percent, compared with 1.4 percent from 1972 to 1995. Since 2000 there has been a shift in the nation's productivity growth. While technology still accounts for about 75 percent of the nation's productivity growth, the service industries are now providing the rest, with retail trade, wholesale trade, and financial services leading the way. Technological innovation may be enabling productivity increases, but competition is the driving force. For example, to compete with Wal-Mart, many retailers have had to turn to information technology to manage their businesses more efficiently. "Companies can use information communications technology that link sectors to one another in ways that create joint productivity," said Gail Foster, economist for the Conference Board. In short, one way or another, technological innovation has been fueling labor productivity growth since 1996.

THINK ABOUT IT

If the nation continues to shift toward service industries, will it be harder or easier to increase productivity?

Source: Daniel Gross, "What Makes a Nation More Productive? It's Not Just Technology," *New York Times,* December 25, 2005.

Demand and Supply of Resources

derived demand
The demand for a resource that arises from the demand for the product that resource produces

In the market for goods and services—the *product market*—households are demanders and firms are suppliers. Households demand the goods and services that maximize utility. Firms supply the goods and services that maximize profit. In the *resource market,* roles are reversed. Households are suppliers and firms are demanders. Households supply resources to maximize utility. Firms demand resources to maximize profit. Any differences between the utility-maximizing goals of households and the profit-maximizing goals of firms are sorted out through voluntary exchange in markets.

Market Demand for Resources

productivity
The value of output produced by a resource

Why do firms employ productive resources? Firms use resources to produce goods and services. They try to sell the goods and services to earn a profit. A firm values not the resource itself but the resource's ability to produce goods and services. Because the value of any resource depends on the value of what it produces, the demand for a resource is said to be a *derived demand*. Another term for "derive" is "arise from." Thus, **derived demand** arises from the demand for the good or service produced by the resource. For example, demand for a carpenter arises, or derives, from the demand for the carpenter's output, such as a cabinet or a new deck. Demand for professional baseball players derives from the demand for ballgames. Demand for truck drivers derives from the demand for transporting goods.

The derived nature of resource demand helps explain why professional baseball players usually earn more than professional hockey players, why brain surgeons earn more than tree surgeons, and why tractor-trailer drivers earn more than delivery-van drivers. *The more a worker produces and the higher the price of that product, the more valuable that worker is to a firm.* Thus the demand for a resource is tied to the value of the output produced by that resource, or its **productivity**. The more productive a resource, the more a firm is willing to pay for it.

The market demand for a particular resource is the sum of demands for that resource in all its different uses. For example, the market demand for carpenters adds together the demand for carpenters in residential and commercial

Main Idea

Role of Resources in Determining Income

Income for most people is determined by the market value of the productive resources they sell. What they earn depends on the market value of what they produce and how productive they are. **What are the factors that determine the amount of income the chef in this photo earns?**



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construction, remodeling, cabinetmaking, and so on. Similarly, the market demand for the resource, timber, sums the demand for timber as lumber, furniture, railway ties, pencils, toothpicks, paper products, firewood, and so on. The demand curve for a resource, like the demand curves for the goods produced by that resource, slopes downward. This is depicted by the demand curve for carpenters, *D,* in Figure 9.1.

As the price of a resource falls, firms are more willing and more able to employ that resource. Consider first the firm's greater *willingness* to hire resources as the resource price falls. In developing the demand curve for a particular resource, the prices of other resources are assumed to remain constant. If the wage of carpenters falls, this type of labor becomes relatively cheaper compared with other resources the firm could employ to produce the same output. Firms, therefore, are more willing to hire carpenters rather than hire other, now relatively more costly, resources.

Firms may make *substitutions in production*. For example, a homebuilder can employ more carpenters and fewer prefabricated sections made at a factory. Likewise firms can substitute coal for oil or security alarms for security guards, as the relative price of coal or security alarms declines.

A lower price for a resource also increases a firm's *ability* to hire that resource. For example, if the wage for carpenters falls, homebuilders can hire more carpenters for the same total cost. The lower resource price means the firm

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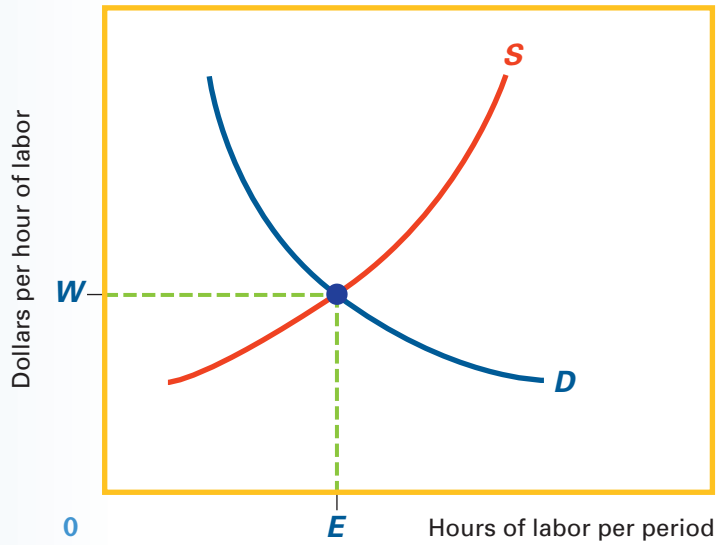
The demand for architects is derived from the demand for new construction, particularly commercial buildings. The American Institute of Architects maintains a career center with a job board. Access this web site through thomsonedu.com/school/econxtra. You can find analysis and forecasts for many jobs in the Bureau of Labor Statistics' *Occupational Outlook Handbook (OOH).* Access the prospectus for architects in the OOH through thomsonedu.com/school/econxtra. What is the future employment outlook for professional architects?

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Labor Market for Carpenters — **Figure 9.1**

The intersection of the upward-sloping supply curve of carpenters with the downward-sloping demand curve determines the equilibrium wage rate, W, and the equilibrium level of employment, E.



The Graphing Workshop

is *more able* to buy the resource. Because producers are more willing and more able to employ a resource when the price of the resource declines, the demand curve for a resource slopes downward, as shown in Figure 9.1.

Market Supply of Resources

equilibrium wage
The wage at which the quantity of labor firms want to hire exactly matches the quantity workers want to supply

On the other side of the market, resource suppliers tend to be both more *willing* and more *able* to supply the resource as its price increases. This explains the upward-sloping market supply curve, as shown in Figure 9.1 by the supply curve of carpenters, *S*. Resource suppliers are more *willing* because a higher resource price, other things constant, means more goods and services can be purchased with the earnings from each unit of the resource supplied.

Resource prices are signals about the rewards for supplying resources to alternative activities. A high resource price tells the resource owner, "The market really values your resource and is willing to pay you well for what you supply." Higher prices will draw resources from lower-valued uses. For example, as the wage for carpenters increases, the quantity of labor supplied will increase. Some carpenters will give up leisure time to work more hours. Also, people in other lines of work will be attracted to carpentry.

The second reason a resource supply curve slopes upward is that resource owners are more *able* to supply the resource at a higher price. For example, a higher carpenter's wage means more apprentices will choose to undergo training to become carpenters. The higher wage *enables* resource suppliers to increase their quantity supplied. Similarly, a higher timber price enables loggers to harvest trees in less accessible regions. A higher oil price enables drillers to explore more remote parts of the world.

The interaction in Figure 9.1 of the labor demand curve, *D,* and the labor supply curve, *S,* determines the equilibrium wage for carpenters, *W,* and the equilibrium employment of carpenters, *E.* At the **equilibrium wage**, the quantity of labor firms want to hire exactly matches the quantity carpenters want to supply. At the equilibrium wage, there is neither an excess quantity of carpenters demanded nor an excess quantity supplied. The interaction of labor demand and labor supply determines the market wages and thereby allocates the scarce resource, labor.

Span the Globe

The Immigration Issue

According to an April 2006 poll by FOX News, the U.S. public is overwhelmingly opposed to giving undocumented immigrants rights while so many potential immigrants are attempting to get into the country in the proper legal fashion. A clear majority of those sampled believe that undocumented immigration is a serious problem for the country. According to a report based on an earlier opinion poll conducted in May 2005, most opponents of undocumented immigration and efforts to give guest-worker status to individuals here without documentation are Democrats, African Americans, women, and those with a household income below $75,000. In addition, some subgroups among those polled wanted to curtail all immigration, not just the undocumented workers.

THINK CRITICALLY

What if Congress eliminated immigration into the United States? In the short run, what would happen to the wage rate and level of employment in the United States? What might happen in the long run?

Sources: Dana Blanton, FOX Poll: "Views on Illegal Immigration," Fox News Polls, April 7, 2006; World Net-Zogby Poll: "Americans Fed Up With Illegal Aliens," May 6, 2005.

✓ CHECKPOINT

Explain the shapes of a resource demand curve and a resource supply curve.

Nonwage Determinants of Labor Demand

The quantity of labor demanded increases as the wage decreases, other things constant, because a lower wage makes employers more willing and more able to hire workers. Thus the labor demand curve slopes downward, other things constant, as you saw in Figure 9.1. What are the things that are assumed to remain constant along a given labor demand curve? In other words, what are the nonwage factors that help shape the labor demand curve?

Demand for the Final Product

Labor demand is derived from the demand for the output produced by that labor. For example, the demand for carpenters derives from the demand for what they produce. Because the demand for labor is *derived* from the demand for that labor's output, any change in the demand for that output affects resource demand. For example, an increase in the demand for housing will increase the demand for carpenters. As shown in Figure 9.2, this causes the demand curve for that labor to shift to the right, from D to D'. A rightward shift of the demand for carpenters will increase the market wage and employment.

Prices of Other Resources

The prices of other resources are assumed to remain constant along the downward sloping demand curve for labor. A change in the price of other resources could shift the demand for labor. Some resources substitute for each other in production. For example, prefabricated home sections built mostly by machine at the factory substitute for on-site home construction by carpenters. Substitutes can replace each other in production. With **resource substitutes**, an increase in the price of one increases the demand for the other. For example, an increase in the price of prefabricated home sections will increase the demand for carpenters. This will shift the demand for carpenters to the right, as in Figure 9.2.

resource substitutes
One resource can replace another in production; an increase in the price of one resource increases the demand for the other

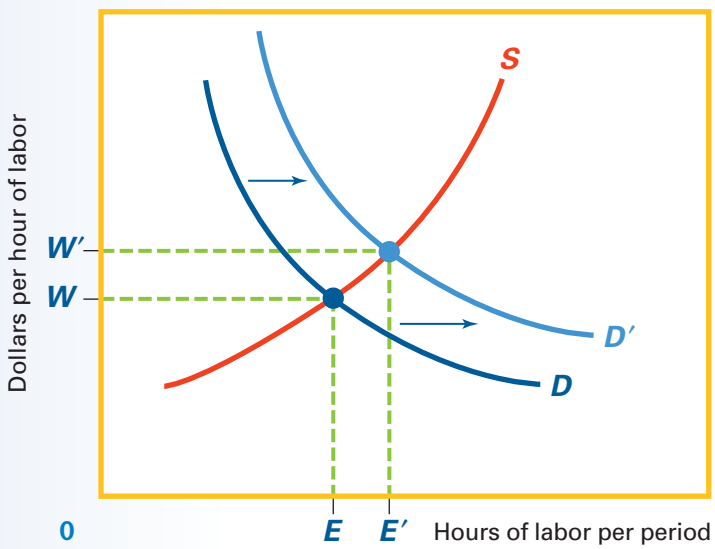
Some resources are complements in production—carpenters and lumber, for example. Complements go together in

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An Increase in the Demand for Carpenters — **Figure 9.2**

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An increase in the demand for carpenters is shown by a rightward shift of that labor demand curve. This shift increases the market wage and increases employment of carpenters.



resource complements

One resource works with the other in production; a decrease in the price of one increases the demand for the other

production. With **resource complements**, a decrease in the price of one leads to an increase in the demand for the other. If the price of lumber decreases, the quantity of lumber demanded increases, which increases the demand for carpenters, shifting the demand for carpenters to the right.

As another example, trucks and truck drivers are complements. Any increase in the quantity or quality of a complementary resource, such as trucks, boosts the productivity of the truck drivers. This, in turn, increases the demand for truck drivers. Bigger and better trucks make truck drivers more productive.

Technology

A labor demand curve assumes a given level of technology in that market. Thus, technology is assumed to be constant along a labor demand curve. A change in technology can shift the labor demand curve. More technologically sophisticated capital can increase the productivity of labor, thus increasing the demand for labor. For example, better power tools, such as a pneumatic nail driver, make carpenters more productive, thus shifting the demand for carpenters to the right. Alternatively, improved technology could make some workers unnecessary, thus shifting the demand for carpenters to the left. An example of this would be a factory using a robot to perform tasks that had been done by workers.

Sometimes a technological improvement can increase the demand for some resources but reduce the demand for others. For example, the development of computer-generated animated movies increased the demand for computer programmers with that skill. At the same



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One reason truck drivers in the United States earn at least 20 times more than rickshaw drivers in Asia is the nature of the vehicles themselves. Compare the photograph of a rickshaw on the first page of this chapter to the tractor-trailer shown here. What specific characteristics of the tractor-trailer make it a more productive resource than the rickshaw?

time, it decreased the demand for animators who drew each frame by hand.

✓ CHECKPOINT

What can shift the labor demand curve?

Nonwage Determinants of Labor Supply

The quantity of labor supplied increases with the wage, other things constant, so the labor supply curve slopes upward. What are the other things that are assumed to remain constant along a given supply curve? In other words, what are the nonwage factors that help shape the labor supply curve?

Worker Wealth

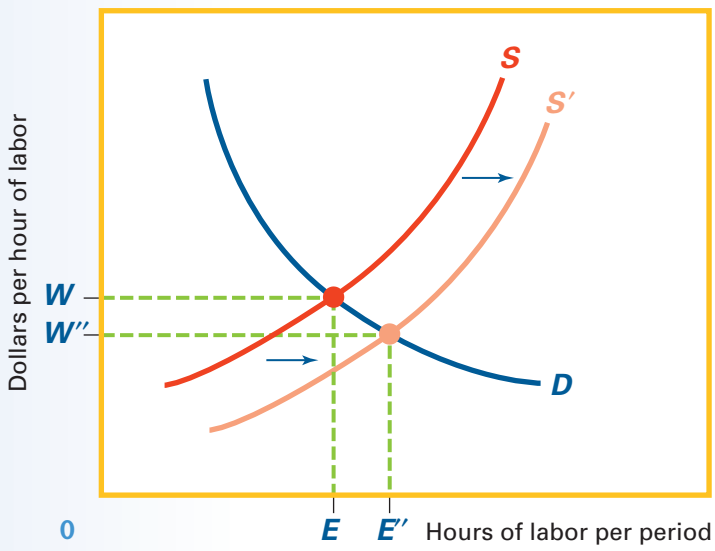
Although some jobs are rewarding in a variety of nonmonetary ways, the main reason people work is to earn money to buy goods and services. The wealthier people are, the less they need to work for a living. Thus, a person's supply of labor depends, among other things, on his or her wealth, including homes, cars, savings, stock holdings, and other assets. A person's wealth is assumed to remain constant along the labor supply curve.

A decrease in wealth would prompt people to work more, thus increasing their supply of labor. For example, the stock market decline between 2000 and 2003 reduced significantly the wealth that many people planned to draw on during retirement. As a result, they had to put retirement plans on hold and instead work more and longer to rebuild their retirement nest egg. This increased the supply of labor, as shown by the rightward shift of the labor supply curve from S to S' in Figure 9.3. This reduced the wage and increased employment.

As an example of the opposite effect, winners of multimillion-dollar lotteries often announce they plan to quit their jobs. This would reduce their supply of labor in response to the increase in their wealth. In your own life, if you were to inherit a tidy sum, you might decide not to work next summer. This would decrease your labor supply.

An Increase in the Supply of Carpenters — **Figure 9.3**

An increase in the supply of carpenters is shown by a rightward shift of the labor supply curve. This shift reduces the market wage and increases employment of carpenters.



Working Conditions

Labor supplied to a particular market depends on the working conditions, such as the difficulty of the job and the attractiveness of the work environment. Working conditions are assumed to remain constant along a given labor supply curve. Any improvement in working conditions would shift the labor supply curve rightward. For example, if employers offer carpenters more flexible hours, many will find this more attractive than a rigid work schedule. These carpenters will increase their supply of labor, shifting the labor supply curve to the right, as shown in Figure 9.3.

More generally, people supply less labor to jobs that are dirty, dangerous, dull, exhausting, illegal, low status, dead-end, and involve inconvenient hours. People supply more labor to jobs that are clean, safe, interesting, energizing, legal, high status, have advancement potential, and involve convenient hours.

Tastes for Work

Just as consumer tastes for goods and services are assumed to remain constant along a demand curve, worker tastes for jobs are assumed to remain constant along a given labor supply curve. Job tastes are relatively stable. They don't change overnight. Still, over time the supply of labor could change because of a change in the taste for a particular job. For example, suppose carpentry becomes more appealing because people become more attracted to jobs that provide exercise, fresh air, and the satisfaction of building something. In this case, the supply of labor to carpentry would shift rightward, as in Figure 9.3.

As another example of how worker tastes can change over time, most teenagers a decade ago found jobs at fast-food restaurants relatively attractive. Teenagers today seem to prefer upscale employers such as Starbucks and the Gap.



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Based on working conditions, do you think that many people would like to supply their labor as steel workers? Why or why not?

✓ CHECKPOINT

What can shift the labor supply curve?

Investigate Your Local ECONOMY

In small groups, discuss job tastes among students at your high school. Do you see any trends? Are some jobs more desirable than others? Why do you think this is so?

Assessment 9.1

Key Concepts

1. What is the demand for workers in your school cafeteria derived from?
2. Why would the demand for roofers increase if the price of shingles fell by 50 percent?
3. Why would an increase in the price of heating oil along a given supply curve increase the quantity of heating oil supplied to the market?
4. What would happen to the demand for technicians who produce computer chips if a new chip-manufacturing process using only half as much raw material was introduced?
5. Why might the supply of high-school students who are willing to work in fast-food restaurants decrease if there was an economic boom and a huge increase in stock values?

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Graphing Exercise

6. Draw a labor supply curve for students who are willing to work, based on the data in the table. Explain what would happen to the location of this labor supply curve as a result of each of the listed events.

Hourly Wage Rate	Number of Students Willing to Work
$6	5
$7	10
$8	15
$9	20
$10	25

a. A large employer in town closes and thousands of workers are laid off.
b. Wearing old clothes becomes popular with students. This style causes many young people to stop buying new clothing.
c. The state board of education raises the grade requirement to graduate.

Think Critically

7. **Management** Make a list of nonwage determinants of labor supply that managers could use to increase the supply of labor.
8. **Science** Identify scientific developments that have taken place in the last 50 years that have changed the demand for labor in the marketplace.

Sharpen Your Skills



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Working with Percentages

Raw economic data can be difficult to interpret. It often is more meaningful if expressed in terms of percentages. For example, your father might have said something like this in July 2006: "In 1980, when I was 16 years old, I earned only $3.10 an hour." You might believe that what he said was true. However, would this information alone give you an accurate idea of how well he was paid? Probably not. In order to compare values over time, many economists adjust them for inflation and then express the values as percentages. The most common tool they use for comparing values is the Consumer Price Index, or CPI. In 1980, the CPI was 82.4. In July 2006, it was 203.5. But again, what do these numbers mean? You can answer this question by finding the percentage change in the CPI and using it to adjust the value of your father's 1980 income.

To calculate the percentage change in the CPI, you need to find the change in the index (203.5 − 82.4 = 121.1) and divide this change by the original index (121.1 ÷ 82.4 = 1.47 or 147%). According to the CPI, prices increased on average by 147% between 1980 and July 2006.

To find the purchasing power of the 1980 wage in July 2006, you need to multiply $3.10 times the percentage increase in the CPI and then add the result to the 1980 wage of $3.10:

$$\$3.10 \times 1.47 = \$4.56$$

$$\$4.56 + \$3.10 = \$7.66$$

Knowing that the purchasing power of your father's 1980 wage was $7.66 in July 2006 dollars is more meaningful to you than simply knowing he earned $3.10 in 1980.

Apply Your Skill

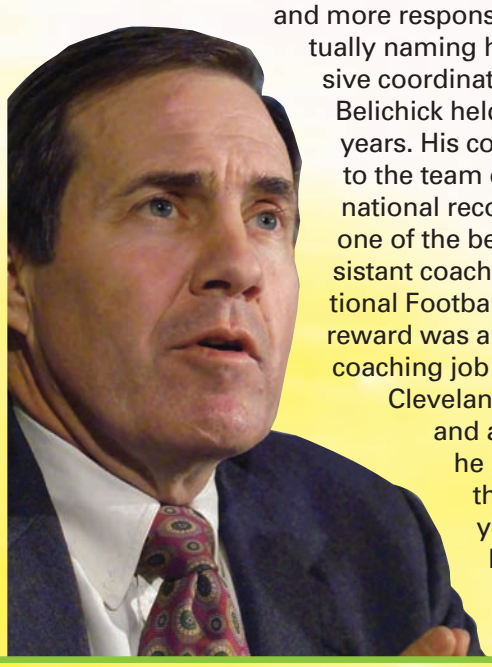
1. In 1990, the CPI was 130.7 and the average price for an eight-foot 2-by-4 used to construct houses was $1.59. In July 2006, the same 2-by-4 cost $2.29. Use the method demonstrated above to calculate whether the price of 2-by-4s increased more or less rapidly than the CPI.
2. Suppose you earned $10.00 per hour in July 2006. Further, suppose that by July 2009, the CPI would be 222.4. If you earn $14.00 per hour at that time, what would the real value of your wage be in terms of July 2006 dollars? Would you be better off or worse off than in July 2006?

movers & shakers

Bill Belichick *Head Coach, New England Patriots*

Steve Belichick never pushed his son to be a football coach. But football was in Bill Belichick's blood. He grew up watching his dad scout games and break down game films as an assistant coach of the U.S. Naval Academy football team, a job his dad held for 33 years.

It came as no surprise when, after graduating from Wesleyan University with a degree in economics, Bill Belichick turned down a high-paying job in business to be a coaching assistant for the Baltimore Colts for $25 a week. A year later he became a special teams coach for the Detroit Lions and later the Denver Broncos. Then he joined the staff of the New York Giants. When Bill Parcells became the Giants' head coach, he gave Belichick more and more responsibility, eventually naming him defensive coordinator, a position Belichick held for six years. His contributions to the team earned him national recognition as one of the best young assistant coaches in the National Football League. His reward was a head-coaching job with the Cleveland Browns, and at age 38 he became the NFL's youngest head coach.



AP PHOTO/STEVEN SENNE

Five mediocre seasons with the Browns didn't ruin his career. Eventually he landed as head coach of the New England Patriots where he won three Super Bowls in four years. He claims the best post-season record in NFL history and led the Patriots to 34 victories in two seasons, the highest two-year total in the 85-year history of the NFL.

Belichick's "team-first" philosophy is a key to his success, but this philosophy also spurs controversy. To the horror of his fans, as Cleveland's head coach he benched, and then cut, much-beloved quarterback Bernie Kosar. When New England quarterback Drew Bledsoe was injured, Belichick replaced him with an unknown named Tom Brady, and then refused to return Bledsoe to the starting position when his health returned. After defensive back Lawyer Milloy helped the Patriots win a Super Bowl title, Belichick refused to meet his salary demands and let Milloy leave the team.

Belichick doesn't worry about other people's opinions. He doesn't hesitate to bench players, including all-stars, for violating team rules. He doesn't play favorites and has managed to build winning teams with few big-name players. He's all business, and it shows in his players. They concentrate on details, work hard to avoid mistakes, don't waste time taunting opponents, and don't gloat when they win.

Belichick's assistant coaches have learned from him, too. Three have become head coaches for other NFL teams. Three others head Division 1 college football programs.

Choosing a job for love over money was a decision that paid off for Bill Belichick.

SOURCE READING

Give several examples from this article that illustrate Belichick's "team-first" philosophy. Why do you think this philosophy is controversial with football fans?

ENTREPRENEURS IN ACTION

After graduating from college, Bill Belichick accepted a coaching job that paid only $25 a week because he had a passion for football. What are you passionate about? How can you translate that passion into a successful career?

Sources: Charles Stein, *Boston Globe,* January 28, 2004; Leonard Shapiro, *Washington Post,* January 28, 2005; New England Patriots' web site: www.patriots.com/team/index.cfm?ac=coachbio&bio=506

9.2 Wage Determination

Objectives

- Explain why wages differ across labor markets.
- Describe minimum wage legislation, and discuss its impact on employment and nonwage compensation.

Overview

Because of the division of labor and comparative advantage, the U.S. work force is becoming more specialized. For example, the U.S. Census of 1850 identified 322 job titles. In the 2000 Census, there were 31,000 job titles—about 100 times the number in 1850. The pay for each of these specialties is determined by the intersection of a labor demand curve and a labor supply curve. The resulting differences in pay across job specialties can be huge.

Key Terms

minimum wage law

In the News

Winner-Take-All Labor Markets

Each year *Forbes* magazine reports on the multimillion-dollar earnings of top entertainers and professional athletes. Entertainment and sports have come to be called "winner-take-all" labor markets because a few key people critical to the overall success of an enterprise are richly rewarded. For example, the credits at the end of a movie list the dozens of people involved in its production. Hundreds, sometimes thousands, more are employed behind the scenes. Despite a huge cast and crew, the difference between a movie's financial success and its failure depends on the performance of just a few people—the lead actors, the director, and the screenwriter. These are the people who are compensated the most. The same happens in sports. Although thousands of players compete each year in professional tennis, for example, the value of television time, ticket sales, and endorsements is based on the drawing power of just the top players. In professional golf, attendance and TV ratings are significantly higher for tournaments in which Tiger Woods is in the running. Compensation for top performers is determined through open competition for their talents. The competition bids up their pay to extremely high levels, such as the $20 million per movie earned by some top stars. This is more than 1,000 times the average annual earnings of Screen Actors Guild members.

THINK ABOUT IT

Do you think it is fair that top entertainers and sports figures earn as much money as they do? Why or why not?

Sources: Stefan Fatsis, "Thanks to Tiger's Roar, PGA Tour Signs Record TV Deal Through 2007," *Wall Street Journal,* July 17, 2001; Robert H. Frank and Philip J. Cook, *The Winner-Take-All Society* (New York: Free Press, 1995); Barbara Whitaker, "Producers and Actors Reach Accord," *New York Times,* July 5, 2001.

Why Wages Differ

Wages differ substantially across labor markets. Figure 9.4 shows average hourly wages for the 129 million U.S. workers in 2004. Workers are sorted into 22 occupations from the highest to the lowest average wage. Management earns the highest wage, at $42 an hour, and food workers earn the lowest, at $8.50 an hour. Wage differences across labor markets can be attributed to differences in labor demand, labor supply, or both.

Differences in Training, Education, Age, and Experience

Some jobs pay more because they require a long and expensive training period. Costly training reduces market supply because fewer people are willing to undergo the time and expense required. However, extensive training increases the productivity of labor. This in turn increases the demand for workers with those skills. For example, certified public accountants (CPAs) earn more than file clerks because the extensive training for CPAs limits the supply to this field and because this training increases the productivity of CPAs compared to file clerks. Reduced supply and increased demand both increase the market wage. Even among physicians, some specialties earn more than others because of a longer training period. This is why, for example, surgeons on average earn twice as much as general practitioners.

Figure 9.5 shows how education and experience affect earnings. Age groups are shown on the horizontal axis and

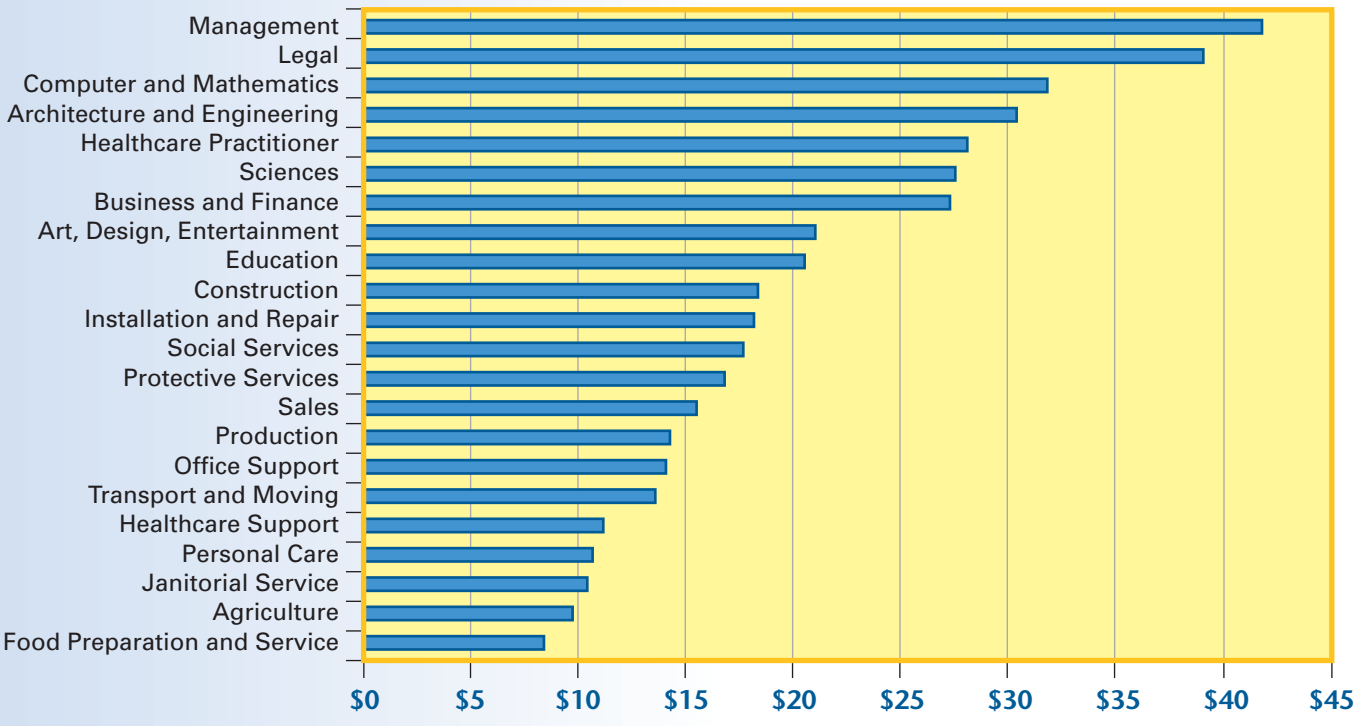
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What would happen if everyone were paid the same?

Average Hourly Wage by Occupation — Figure 9.4



The average hourly wages for the 129 million U.S. workers in 2004 are sorted from the highest to the lowest in this bar graph. Wage differences across labor markets can be attributed to differences in labor demand, labor supply, or both.

Source: U.S. Bureau of Labor Statistics. Figures are for November 2004.

TeamWork

Divide into groups of four. Each group member should choose one of the occupation categories shown in Figure 9.4. Make sure that each member chooses a different occupation. As a group, discuss the reasons for the wage differences among the four occupations.

average annual earnings, on the vertical axis. Earnings are for all full-time, year-round workers. The lines are labeled to reflect the highest level of education achieved and range from "Less than ninth grade" (bottom line) up to "Professional degree" (top line). Professional degrees include graduate degrees in law, medicine, business administration, and the like.

The relationship between income and education is clear. At every age, those with more education earn more. For example, in the 35-to-44 age group, earnings for those with a professional degree average six times more than those with less than a ninth-grade education. Age itself can also have an important effect on income. Earnings increase as workers gain more job experience and become more productive.

Notice that the pay increase based on age is greater for more-educated workers. For example, among those with less than a ninth-grade education, workers in the 55-to-64 age group earned only slightly more than those in the 25-to-34 age group. But among those with a professional degree, workers in the 55-to-64 age group earned nearly twice as much as those in the 25-to-34 age group.

These earnings differences reflect the normal operation of labor markets. More education and more job experience increase labor productivity, and more productive workers earn more.

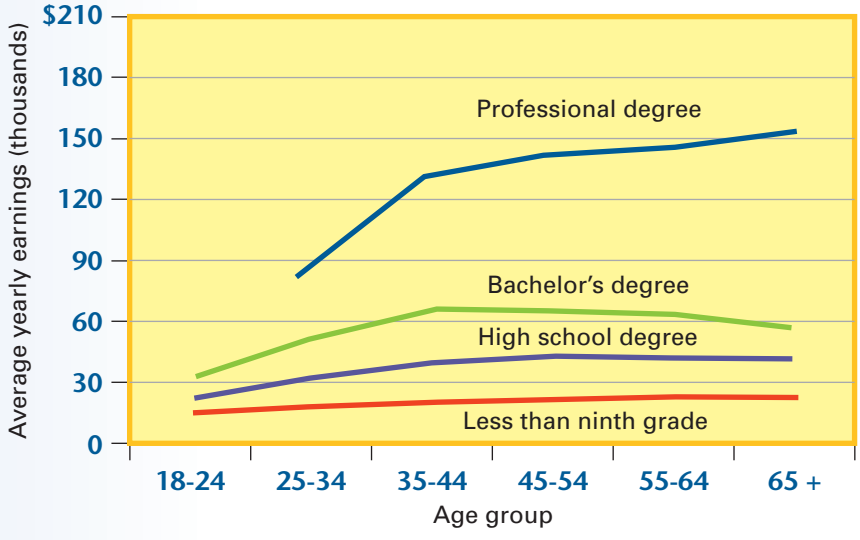
Differences in Ability

Because they are more able and more productive, some workers earn more than others with the same training and education. For example, two college graduates majoring in economics may have identical educations, but one earns more because of greater ability and higher productivity. Most business executives have extensive training and business experience, but few become chief executives of large corporations.

Education Pays More for Every Age Group — **Figure 9.5**

At every age, those with more education earn more. Earnings also increase as workers gain more job experience and become more productive. The rewards from years of experience are greater for those with more education.

Source: U.S. Census Bureau, *Current Population Survey,* 2005 Annual Social and Economic Supplement. Figures are average earnings for all full-time, year-round workers in 2004.



The same goes for professional athletes. In the National Basketball Association, for example, Shaquille O'Neal of Miami was paid $20 million in 2006, which was about 50 times that paid to players earning the league minimum. Being tall helps boost productivity and pay.

Differences in Risk

Jobs with a higher probability of injury or death, such as coal mining and fishing, pay more than safer jobs, other things constant. Workers also earn more, other things constant, in seasonal jobs such as construction and fishing. This is due to the greater risk of unemployment at certain times of the year.

Some jobs are both dangerous and seasonal. For example, deckhands on fishing boats in the winter waters of the Bering Sea off Alaska earn more than $4,000 for five days of work. The temperature on the boats is seldom above zero and daily shifts allow only three hours for sleep.

Geographic Differences

People have a strong incentive to supply their resources in the market where they earn the most, other things constant. For example, basketball talent from around the world is drawn to America's National Basketball Association because of the high pay. Likewise, because physicians earn more in the United States than elsewhere, thousands of foreign-trained physicians migrate here each year. The flow of labor is not all one way. Some Americans seek their fortune abroad, with basketball players going to Europe and baseball players headed to Japan.

Job Discrimination

Some people earn lower wages because of discrimination in the job market based on race, ethnicity, or gender. Although such discrimination is illegal, history shows that certain groups—including African Americans, Hispanics, and women—have systematically earned less than others of apparently equal ability.

Job-market discrimination can take many forms. An employer may fail to hire a minority job applicant because the applicant lacks training. But this lack of training can arise from discrimination in the schools, in union apprenticeship programs, or in employer-run training programs. For example, evidence suggests that black workers receive less on-the-job training than otherwise similar white workers.



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Many forms of discrimination in the workplace result in fewer opportunities for some workers. Propose a solution to the problem of job discrimination.

The Equal Employment Opportunity Commission, established by the Civil Rights Act of 1964, monitors cases involving unequal pay for equal work and unequal access to promotion. Research suggests that civil rights legislation has helped narrow the black-white earnings gap.

The gap between male and female pay also has narrowed. For example, among all full-time, year-round U.S. workers, females in 1980 earned only 60 percent of what males earned. By 2004, females earned 76.5 percent of male pay. In addition to discrimination as a source of the pay gap, women do more housework and childcare than men do. This tends to reduce female job experience. It also causes some women to seek more flexible positions, which often pay less.

Union Membership

Finally, workers represented by labor unions earn more on average than other workers. The final section of this chapter will discuss the effects of labor unions on the market for labor.

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✓ CHECKPOINT

Why do wages differ across labor markets?

ETHICS IN ACTION

Women Trail Men

Statistically, women make up about 51 percent of the country's 300 million people, but men outnumber women in the workforce 53 to 47 percent. In the age-old battle about "equal pay for equal work," women have come a long way. They now hold nearly half the executive and managerial jobs in the United States. Where pay is concerned, however, the statistics aren't quite as good. Among men and women working full time in 2004, women earned only 76.4 percent as much as men. Women are more likely to interrupt their careers to have a family, and this contributes to their lower relative pay. Recent studies of male and female graduates of Yale and Harvard indicate that a significant segment of women who graduate from elite colleges are leaving the workforce after childbirth. The Yale study showed that, of alumni in their forties, 90 percent of the males were still working compared with only 56 percent of the females. "In my lifetime, there will still be a wage gap," said the president of the National Association of Female Executives. "It's up to women in senior positions to bring other women up, or else it's not going to happen." Women's leaders say that another contributor to lower earnings for women is gender discrimination.

THINK CRITICALLY

What are the social factors behind gender discrimination? Do you think it should be up to the government to correct this wage gap? Why or why not?

Sources: Richard Posner, "Elite Universities and Women's Careers," www.becker-posner-blog.com/archives/2005/09/elite_universit.html, September 25, 2005; "The Gender Wage Ratio Fact Sheet," Institute for Women's Policy Research, August 2005; U.S. Census Bureau Population Clock. www.census.gov/population/www/; Genaro C. Armas, Associated Press, "Census: Women Still Trail Men at Highest Salary Levels," *Las Vegas Review Journal,* March 25, 2003.

The Minimum Wage

minimum wage law
Establishes a minimum amount that an employer can pay a worker for an hour of labor

In 2000, Congress approved a measure to increase the minimum wage by $1.00 to $6.15. The legislation was vetoed by then President Clinton, who disliked the tax cut tied to the measure. The **minimum wage law** establishes a minimum amount that an employer can pay a worker for an hour of labor.

NETBookmark

The U.S. Department of Labor provides information about the minimum wage on its web site. Access the web page entitled "Compliance Assistance—Fair Labor Standards Act (FLSA)" on the DOL web site through thomsonedu.com/school/econxtra. What is the current federal minimum wage? Which groups of workers are exempt from minimum wage laws?

thomsonedu.com/school/econxtra

Coverage of the Law

When the legislation was vetoed, only about 7 percent of the U.S. workforce earned between $5.15 and $6.15 an hour and thus could have been affected by an increased minimum wage. All other workers earned more than $6.15 an hour. This low-wage group included workers with few job skills. Most were young, the majority worked only part time, and they were employed primarily in service and sales occupations. For example, while 8 of 10 working teenagers earned less than a dollar above the minimum wage, fewer than 1 in 10 workers in their mid-40s earned that little.

Effects of the Minimum Wage

Advocates of minimum-wage legislation argue that it increases the income of the poorest workers at little or no cost to overall employment. Critics argue that a minimum wage established above the equilibrium wage causes employers

either to reduce the quantity of labor employed or change something else about the job.

Most research on the effects of the minimum wage finds either no effect on employment or a negative effect, particularly among teenage workers. Employers often react to a minimum wage increase by

- substituting part-time jobs for full-time jobs
- substituting more-qualified minimum-wage workers (such as high school graduates) for less-qualified workers (such as high school dropouts)
- adjusting some nonwage features of the job to reduce employer costs or increase worker productivity.

Nonwage Job Features

Congress may be able to legislate a minimum wage, but employers can still adjust many other conditions of employment Here are some of the nonwage job components that an employer could alter to offset the added cost of a higher minimum wage: the convenience of work hours, expected work effort, on-the-job training, time allowed for meals and breaks, wage premiums for night shifts and weekends, paid vacation days, paid holidays, sick leave policy, healthcare benefits, and so on. For example, one study found that restaurants responded to a higher minimum wage by reducing fringe benefits, particularly vacation time, and reducing the higher wages offered for less-desirable shifts.

Higher Opportunity Cost of School

A higher minimum wage also raises the opportunity cost of staying in school. According to one study, an increase in the minimum wage encouraged some 16- to 19-year-olds to quit school and look for work, though many failed to find jobs. Those who had already dropped out of school were more likely to become unemployed because of a higher minimum wage. Thus, an increase in the minimum wage may have the unintended consequence of encouraging some students to drop out of school. The unemployment rate is highest for high-school dropouts. In 2006, 16 states had a minimum wage higher than the federal minimum.

✓CHECKPOINT

How might an increase in the minimum wage affect nonwage compensation for low-wage workers?



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Jobs high school students find, such as waitressing, often pay minimum wage. One study found that if the minimum wage were increased, some students would drop out of high school to pursue full-time work. What is your opinion on this issue? Should government keep the minimum wage lower so the drop-out rate won't increase?

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Key Concepts

1. Why are people who are trained to repair computers paid more than people who are trained to mend clothing?
2. Why is the earning power of a college liberal arts major less than that of an electrical engineering major?
3. Why does job discrimination harm not only the people who are discriminated against but also society in general?
4. Why might an increase in the minimum wage cause greater unemployment among low-skill workers?

Graphing Exercise

5. When data are gathered about the labor supply in the United States, people are divided into several categories. Some people are not considered because they are too young or unable to work for other reasons. The remaining people comprise the *civilian noninstitutional population (CNP).* Of this group, some people do not choose to seek employment and so are not considered to be in the labor force. The remaining people are in the labor force and are either employed or unemployed. Use the data in the table to draw a multiple line graph that illustrates the data given below. What does your graph tell you about the growth in the labor supply available to U.S. employers during the decade?

Labor Force Data, 1994–2004
Values in millions of people

Year	CNP	Not in Labor Force	In Labor Force	Employed	Unemployed
1994	196.8	65.8	131.0	123.1	7.9
1996	200.6	66.6	134.0	126.7	7.3
1998	205.2	67.5	137.7	131.5	6.2
2000	209.7	68.8	140.9	135.2	5.7
2002	217.6	72.7	144.9	136.5	8.4
2004	223.4	76.0	147.4	139.2	8.2

Source: *Statistical Abstract of the United States,* 2006, p. 387.

Think Critically

6. **Government** In 1968, the federal minimum wage was $1.60 per hour. This might seem to be a small amount. However, when adjusted for inflation it had the same purchasing power as $7.92 per hour in 2000 dollars. In 2000, the federal minimum wage was $5.15 per hour. Therefore, the real (adjusted for inflation) value of the minimum wage fell by about 35 percent between 1968 and 2000. Why do you think the federal government did not increase the minimum wage at the same rate as inflation? How might this have affected the number of minimum-wage jobs offered to workers?

9.3 Labor Unions

Objectives

- Describe the history and tools of U.S. labor unions.
- Analyze how labor unions try to increase wages.
- Discuss recent trends in union membership.

Overview

The aspect of labor markets that makes the most news headlines is the activity of labor unions. Labor negotiations, strikes, picket lines, and heated confrontations between workers and employers all fit neatly into TV's "action news" format. But despite all the media attention, only about one in eight U.S. workers belongs to a labor union. What's more, the overwhelming share of union contracts are reached without a strike. The typical union member is more likely to be a government employee than a steelworker or autoworker. Labor unions seek higher pay and more benefits for members.

Key Terms

labor union
right-to-work law
collective bargaining
mediator
binding arbitration
strike
featherbedding

In the News

Unionization in a Global, Competitive Environment

Recently the share of American workers belonging to unions stood at 12 percent. That's only about one-third the percentage in the 1950s. With union workers averaging about 15 percent more in wages than their nonunion colleagues, many economists conclude that some competitive firms cannot afford unions. They see unions as victims of their own success. Having secured higher wages for their members, unions now face pressure from overseas workers as well as from nonunion workers in the United States. "Unions raise wages and so reduce profits. This is less and less feasible the more competitive the environment," said economist Barry T. Hirsch. One strategy for unions has been to unionize all the firms in a given industry. This avoids the competitive threat of nonunionized firms. "One of unions' most fundamental jobs is to take wages and benefits out of competition," said union president Bruce Raynor. While this may have worked well in large U.S. industrial oligopolies, it hasn't been as effective with increased competition from globalization. Only in the government sector have unions remained strong at 35 percent of workers. There is little competition in the government sector. Union organizers also are setting their sights on other less competitive businesses. Hospitals and energy companies are two likely targets for unionization. Another target is consumer-goods giant Wal-Mart, which gained its competitive advantage by keeping costs and prices low.

THINK ABOUT IT

Why is it more difficult for unions to organize those working in highly competitive markets?

Source: Eduardo Porter, "Unions Pay Dearly for Success," *New York Times,* January 29, 2006.

Organized Labor

In the late nineteenth century, factory workers averaged 11-hour days, 6 days a week. Those in steel mills, paper mills, and breweries averaged 12-hour days, 7 days a week. Child labor was common, and working conditions, often dangerous. For example, according to one estimate, fatal accidents in the steel mills of Pittsburgh accounted for one-fifth of all male deaths in that city during the 1880s. Despite the long hours and dreadful working conditions, millions of immigrants entered the work force, increasing the supply of labor and keeping wages low.

History of Labor Unions

Through a **labor union**, workers join together to improve their pay and working conditions by negotiating a labor contract with their employers. The first labor unions in the United States were *craft unions,* where membership was limited to workers with a particular skill, or craft—such as carpenters, shoemakers, or printers. Craft unions eventually formed their own national organization, the *American Federation of Labor (AFL),* in 1886. The AFL was not a union itself but rather an organization of national unions, each retaining its own independence.

The Clayton Act of 1914 exempted labor unions from antitrust laws, meaning that *union members at competing companies could join forces legally in an effort to raise wages and improve working conditions.* Unions also were exempt from taxation. This favorable legislation encouraged the union movement.

The *Congress of Industrial Organizations (CIO)* was formed in 1935 to serve as a national organization of unions in mass-production industries. Whereas the AFL organized workers in particular crafts, the CIO organized all workers in a particular industry. These *industrial unions* included all workers in an industry, such as all autoworkers or all steelworkers. The labor union still had to organize workers company by company, however. Workers at a company became unionized if a majority of them voted for union representation.

After World War II, economic conditions and public sentiment seemed to turn against unions. In 1947, Congress passed the *Taft-Hartley Act,* which authorized states to approve right-to-work laws. A **right-to-work law** says that a worker at a union company does not have to join the union or pay union dues to hold a job there. Twenty-two states have passed right-to-work laws. These states are mostly in the South, the Plains, and the Mountain states. Union membership rates in the right-to-work states average only half the rates in other states. For more information on the history of labor unions, see the Connect to History feature on page 277.

Collective Bargaining

Collective bargaining is the process by which union representatives and an employer negotiate wages, employee benefits, and working conditions. Once a preliminary agreement is reached, union representatives present it to the membership for a vote. If the agreement is accepted, union representatives and the employer sign a labor contract. If the agreement is rejected, the union can strike or can continue negotiations.

If the negotiators cannot reach an agreement, and if the public interest is involved, government officials may ask a mediator to step in. A **mediator** is an impartial observer who listens to both sides separately and then suggests a solution. The mediator has no power to impose a settlement on the parties.

In the provision of certain vital public services such as police and fire protection, a strike could harm the public. The government may impose **binding arbitration** in these cases. This means that a neutral third party evaluates both sides of the dispute and issues a ruling that both sides must accept. Some disputes skip the mediation and arbitration steps and go directly to a strike.

The Strike

A major source of union power in the bargaining relationship is the threat of a **strike**. This is a union's attempt to withhold labor from the firm. The purpose of a strike is to stop production so as to

right-to-work law
State law that says a worker at a union company does not have to join the union or pay union dues to hold a job there

labor union
A group of workers who join together to seek higher pay and better working conditions by negotiating a labor contract with their employers

collective bargaining
The process by which representatives of the union and the employer negotiate wages, employee benefits, and working conditions

mediator
An impartial observer brought in when labor negotiations break down, to suggest how to resolve differences

binding arbitration
When labor negotiations break down and the public interest is involved, a neutral third party is brought in to impose a settlement that both sides must accept

strike
A labor union's attempt to withhold labor from a firm

force the firm to accept the union's position. But a strike can also hurt union members, who suffer a drop in income and who may lose their jobs permanently. The threat of a strike hangs over labor negotiations and can encourage an agreement. *Although neither party usually wants a strike, rather than give in on key points, both sides act as if they could and would survive one.*

If a strike is called, unions usually picket the targeted employer to prevent or discourage so-called strikebreakers from "crossing the picket lines." With non-striking employees and temporary workers, a firm sometimes can maintain production during a strike. That's bad news for the union.

✓ CHECKPOINT

What are the tools U.S. labor unions use?

Union Wages and Employment

The union's focus usually is on higher wages. Here are two approaches unions employ to increase the wages of their members: (1) reduce the supply of labor and (2) increase the demand for union labor.

Reduce the Supply of Labor

One way to increase wages is for the union to somehow reduce the supply of labor. This occurs with craft unions, such as unions of carpenters or plumbers. The effect of a supply restriction is shown as a leftward shift of the labor supply curve from S to S'' in panel (a) of Figure 9.6. The result is a higher wage and reduced employment.

Successful supply restrictions of this type require the union first to limit its membership and second to force all employers in the market to hire only union members. The union can restrict membership with high initiation fees, long apprenticeship periods, difficult qualification exams, restrictive licensing requirements, and other devices aimed at slowing down or discouraging new membership. But, even if unions can restrict membership, they have difficulty requiring all firms in the market to hire only union workers. In right-to-work states, for example, workers do not have to belong to a union even if the company is unionized.

Professional groups—doctors, lawyers, and accountants, for example—also impose entry restrictions through education and examination requirements. These restrictions usually are defended by the professions on the grounds that they protect the public. Some observers, however, see the restrictions as attempts to increase pay among existing professionals by limiting the labor supply.

NET Bookmark

Does it make a difference to the quality of a job if the workplace is unionized? The AFL-CIO, an umbrella organization for most of the nations' unions, certainly believes it makes a difference. Access the AFL-CIO web site through thomsonedu.com/school/econxtra to read about how and why people join unions. In your opinion, what would be the biggest benefit of union membership? Are there any benefits cited that you do not think would be helpful? If so, what are they?

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Increase the Demand for Union Labor

Another way to increase the wage is to increase the demand for union labor. This strategy is reflected by a rightward shift of the labor demand curve from D to D' in panel (b) of Figure 9.6. This is an attractive alternative because *it increases both the wage and employment.* Following are some ways unions try to increase the demand for union labor.

INCREASE DEMAND FOR UNION-MADE PRODUCTS

The demand for union labor may be increased through a direct appeal to consumers to buy only union-made products. Increasing the demand for union-made products increases the demand for union labor.

featherbedding
Union efforts to force employers to hire more workers than demanded for the task

RESTRICT SUPPLY OF NONUNION-MADE PRODUCTS

Another way to increase the demand for union labor is to restrict the supply of products that compete with union-made products. The United Auto Workers, for example, has backed trade restrictions on imported cars. Fewer imported cars means greater demand for cars produced by U.S. workers, who are mostly union members.

INCREASE PRODUCTIVITY OF UNION LABOR

In the absence of a union, a dissatisfied worker may simply look for another job. Losing workers in this way is costly to the firm because the departing worker often leaves with abundant on-the-job experience that makes the worker more productive and harder to replace. Unions sometimes try to keep workers from quitting or goofing off. This increases worker productivity, thereby increasing the demand for union labor.

FEATHERBEDDING

Another way unions try to increase the demand for union labor is by **featherbedding**. This is an attempt to ensure that more union labor is hired than employers would prefer. For example, union rules require that each Broadway theater hire a permanent "house" carpenter, electrician, and property manager. Once the play begins, these workers appear only on payday to pick up their checks. In addition, the theater's box office must be staffed by at least three people. With featherbedding, the union tries to set not only the wage but also the number of workers that must be hired at that wage.

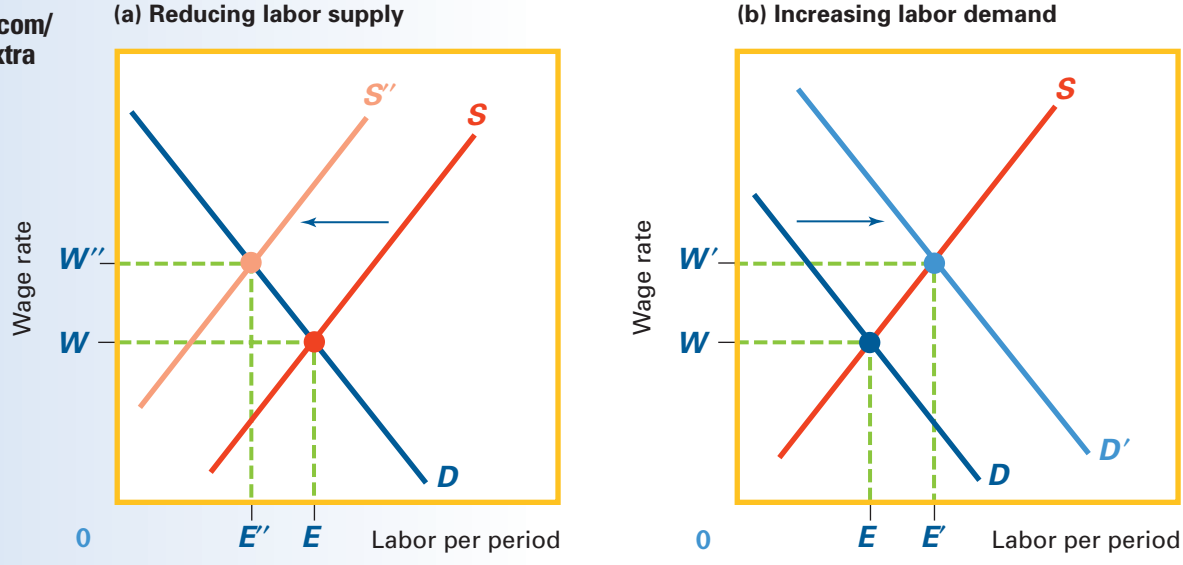
Union Pay Is Higher

Studies have shown that unions increased members' wages by an average of about 15 percent above the wages of similarly qualified nonunion workers. Figure 9.7 compares the median weekly earnings of union and nonunion workers. Unions are more successful at raising wages in less-competitive industries. For example, unions have less impact on service industries, where product markets tend to be competitive. Unions have greater impact on wages in government, transportation,

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Effects of Reducing Labor Supply or Increasing Labor Demand — **Figure 9.6**

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If a union can restrict labor supply to an industry, the supply curve shifts to the left from S to S″, as in panel (a). The wage rate rises from W to W″, but at the cost of a reduction in employment from E to E″. In panel (b), an increase in labor demand from D to D′ raises both the wage and the level of employment.

and construction, which tend to be less competitive.

When there is more competition in the product market, employers cannot easily pass along higher union wages as higher product prices. New firms can enter the industry, pay lower wages, and sell the product for less.

✓ CHECKPOINT

How do unions try to increase the wages of union workers?

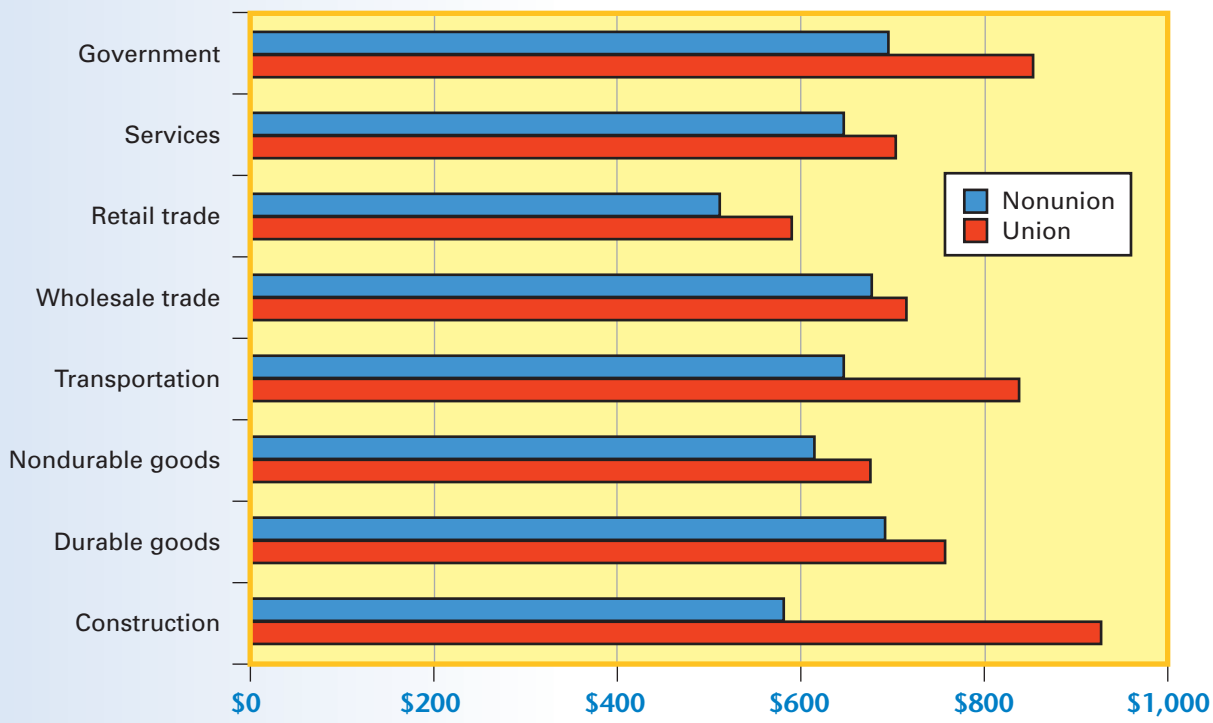
Trends in Union Membership

In 1955, about one-third of workers in the United States belonged to unions. Union membership as a fraction of the workforce has since declined. Now only about one-eighth of all workers belong to a union. Government workers make up nearly half of all union members, even though they account for just one-sixth of U.S. workers. Compared with other advanced economies, the United States ranks relatively low in the share of workers who belong to a union. However, membership rates abroad have declined as well.

Membership by Gender and Age

The bar graph in Figure 9.8 indicates U.S. union membership rates by age and gender. The rates for men, shown by the green bars, are higher than the rates for women. This, in part, is due to the fact that men are employed more in manufacturing. Women are employed more in the service sector, where union membership historically has been lower. The highest membership rates are for middle-aged men. The lowest rates are for young women.

Median Weekly Earnings: Union vs. Nonunion — **Figure 9.7**



Median weekly earnings are higher for union workers than for nonunion workers.

Source: U.S. Bureau of Labor Statistics. Figures are for full-time workers in 2005.

Membership Across States

Union membership rates also vary across states. Figure 9.9 shows union membership as a percent of those employed by state. The figure also shades right-to-work states, where workers in unionized companies do not have to join the union or pay union dues. As noted earlier, unionization rates in right-to-work states average only half the rates in other states. New York has the highest unionization rate at 26.1 percent. South Carolina has the lowest, at 2.3 percent.



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Assembly-line workers in factories often belong to unions. If you worked on an assembly line and had to decide whether or not to join the union, do you think you would join? Why or why not?

Reasons for Declining Membership

Improvements in the conditions of the average worker since the late nineteenth century have been remarkable. The average workweek in some industries has been cut in half. The workplace now is monitored more closely for health and safety hazards. Child labor was outlawed decades ago. Wages have increased substantially.

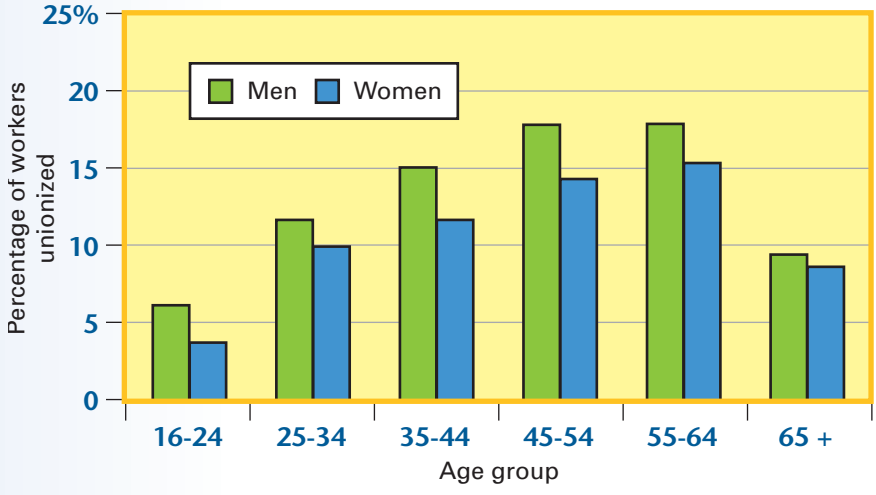
These improvements cannot be entirely credited to labor unions. Competition among employers to attract qualified workers helps explain some of the improvements. The increase in wages can be traced mostly to an increase in labor productivity. This is because workers now have more education and training and benefit from more capital and better technology. However, unions played a crucial role in improving wages and working conditions and in calling public attention to labor problems.

Because working conditions and wages are now much better, workers today feel less inclined to join a union, especially in those states where they need not join to enjoy union pay and benefits. Fewer union members mean fewer voters who belong to unions, so unions also have lost some political clout. Unions have, in a sense, become the victims of their own success. Here are

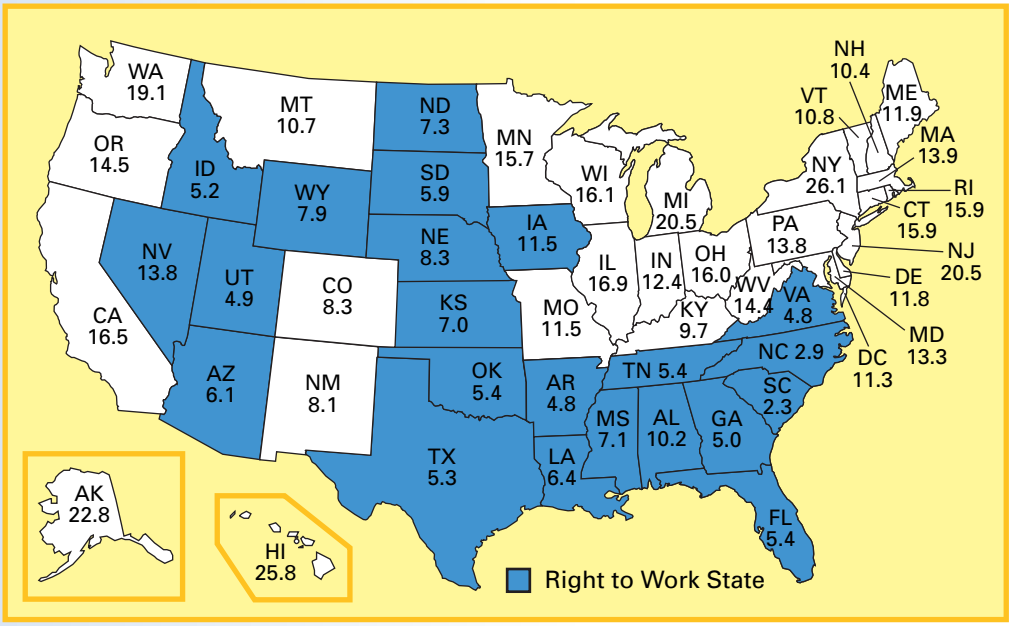
U.S. Union Membership for Men and Women by Age — **Figure 9.8**

Men in the United States have higher rates of union membership than women, due to the nature of the work each group typically performs.

Source: U.S. Bureau of Labor Statistics. Percentages are for 2005.



Right-to-Work States and Unionization Percentage by State **Figure 9.9**



Shaded areas show right-to-work states, where workers in unionized companies do not have to join the union or pay union dues. Numbers indicate union membership as a percentage of those employed in each state. States that have right-to-work laws have only about half the percent of workers who belong to unions as other states.

Source: National Right to Work Committee, www.nrtwc.org/. Unionization rates are for 2005 and right-to-work states are as of 2006.

some additional reasons why union membership has declined.

CHANGES IN THE ECONOMY

The decline in union membership is due partly to changes in the industrial structure of the U.S. economy. Unions have long been more important in the goods-producing sector than in the service-producing sector. But employment in the goods-producing sector, which includes manufacturing and construction, has fallen in recent decades as a share of all jobs.

COMPETITION FROM NONUNION FIRMS

Another factor in the decline of union membership is the growth in market competition, particularly from imports. Increased competition from nonunion employers, both foreign and domestic, has reduced the ability of unionized firms to pass higher labor costs on as higher prices.

STRIKES ARE FEWER AND LESS EFFECTIVE

Finally, the near disappearance of the strike has reduced union power. The 1970s averaged nearly 300 strikes a year involving 1,000 or more workers in the United States. Since 1995, there have been only about 30 such strikes a year. Many recent strikes ended badly for union workers because companies hired permanent replacements. Union members now are more reluctant to strike because of the increased willingness of employers to hire replacements and the increased willingness of some workers—both union and nonunion—to cross picket lines.

✓CHECKPOINT

In what sense is the union movement a victim of its own success?

e-conomics

UNIONIZING IT

Information technology (IT) workers make up a growing share of the labor force. This group has posed special challenges to unionization. For example, in an effort to to hire and retain IT workers most employers provided many incentives and fringe benefits. Union organizers have had a hard time communicating with this diverse group made up of full-time workers, telecommuters, part-timers, temporary workers, and foreign workers on work visas. However, global competition and technological change have cut into the IT workers' good times. More than half of IT workers surveyed recently report that their pay has remained the same or decreased. Worker contribution to health costs have increased. Demand for their skills and worker optimism have decreased. Companies are outsourcing overseas the work of even the most highly skilled IT workers.

THINK CRITICALLY

Why might union membership still not appeal to IT workers?

Source: Evans McDonough Company, "Tech Worker Survey," September, 2005.

Assessment 9.3

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Key Concepts

1. What are the potential costs and benefits for striking union members?
2. Why are unions more often successful in negotiating for higher wages with firms that have monopoly power than with firms that face strong competition?
3. Why is union membership often lower in states that passed right-to-work laws? How did this affect the effectiveness of unions in these states?

Graphing Exercise

4. In the late 1950s, nearly one-third of workers in the United States belonged to a labor union. Since then the share of organized workers has declined steadily. Use the following data to draw a line graph to show the decline in the percent of union-organized workers in the labor force from 1985 to 2005: 1985, 18.0%; 1990, 16.1%; 1995, 14.9%; 2000, 13.5%; 2005, 12.5%.

Think Critically

5. **Research** Investigate a recent strike in your state. What issues were involved? What was the result of the strike?

CONNECT TO HISTORY



Labor Unions

The United States labor movement had its roots in craft industries and skilled workers. The National Trades Union, the country's first national labor union, did not survive the panic of 1837. Only after the Civil War and the great boom in industrial growth in the United States did the union movement grow, as labor organizers realized the bargaining power of national organizations. The first major union to attempt a national reach was the National Labor Union. Started in 1866 in Baltimore, it grew to 60,000 members by 1872. Unwieldy with a diverse membership drawn from many industries, it failed to survive an economic downturn—the panic of 1873.

A third attempt at a national union was the Knights of Labor. Founded in 1869 in Philadelphia, the Knights had a goal of organizing all workers, skilled and unskilled, men and women. The union took a long-term view of labor reform with issues such as pay equity, the eight-hour workday, and the abolition of child labor. The Knights of Labor shied away from using the strike as a tool and played down higher wages as a goal. The broad reforms it sought, and its attempts to unite all segments of the work force, proved difficult, as its members wanted more immediate results. Still, by 1886 it had grown to 750,000 members. In that year, the union was unjustly accused of the bombing of Haymarket Square in Chicago. This led to a public backlash against it and, ultimately, its demise.

Studies show that, unlike today's strikes, those of the 1880s rarely ended in compromise. Only about 10 percent led to something other than total victory for management or labor. The successful strikes for labor—about 50 percent of the total—occurred if the union was supported and the strikes were short. If strikebreakers were employed, the strike likely would fail.

National unions of skilled trades created the American Federation of Labor (AFL), the nation's oldest large-scale labor organization. Unlike the Knights, the AFL wanted to organize skilled workers by craft. Skilled workers were more difficult to replace than unskilled workers, giving the unions more bargaining power. It concentrated on small companies that were less likely to be able to bust the unions. Led by Samuel Gompers, the AFL emphasized basic issues such as higher wages, shorter hours, and better working conditions. It pressed for the "closed shop," a workplace where only union members could be hired. Although it questioned the effectiveness of strikes and boycotts, it did use those methods to force employers to engage in collective bargaining. Mediation also came into more common use to settle labor disputes.

THINK CRITICALLY

Using the concepts of supply and demand, explain how a closed shop could be used to control the labor market within an industry.

9 Chapter Assessment

Summary

9.1 Demand and Supply of Resources

a The demand for a resource is a *derived demand* that arises from the demand for goods and services that resource produces.

b A firm's willingness to hire workers depends on the wage rate and the cost of other resources needed to make the products it supplies. If the cost of one type of resource increases, the firm will try to substitute a less costly resource. If wage rates fall, the firm will hire more workers because they are relatively less expensive compared to other resources.

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c When a wage rate results in the same number of workers seeking employment as there are job openings, the labor market is at the *equilibrium wage.*

d There are many nonwage determinants of labor demand and supply. Nonwage determinants of labor demand include demand for the final product, costs of other resources, and the technology used in production. Nonwage determinants of supply include workers' wealth and working conditions as well as current tastes for work.

9.2 9.2 Wage Determination

a Wages differ among labor markets for a variety of reasons, including differences in education, training, and experience. More productive workers tend to be better paid.

b Wages differ across workers for a variety of reasons. Jobs that are risky, dirty, unpleasant, and have irregular hours and low status pay more than jobs that are safe, pleasant, and have regular hours and high status. Discrimination also can cause some workers to be paid more or less for their labor.

c The purpose of *minimum wage* legislation is to increase wages for the nation's lowest-paid workers. Supporters of higher minimum wages say the laws can help low-paid workers improve their standards of living. Opponents suggest that higher minimum wages will reduce the number of jobs available to low-skill workers.

9.3 Labor Unions

a *Labor unions* are formed when workers join together to improve their pay and working conditions by negotiating labor contracts with their employers. Labor unions fall into two general classifications—craft unions and industrial unions. Craft unions limit membership to workers with a particular skill. Industrial unions are formed when all workers in a particular industry join together.

b Union and management negotiations are carried out through a process called *collective bargaining.* Once a preliminary agreement is reached between the union bargaining team and management, union members vote to either ratify or reject the proposal. Negotiations can be assisted through *mediation* or *binding arbitration,* which involve a neutral third party.

c Unions work to improve wages and working conditions for their members by reducing the supply of labor available to employers or by increasing the demand for union labor. This may be accomplished by limiting union membership, increasing demand for union-made products, restricting the supply of nonunion-made products, or increasing the productivity of union workers. *Featherbedding* occurs when contracts are negotiated that require employers to hire more workers than they think are needed.

d Union membership as a share of the work force has been declining for the last half century. There are many possible reasons for this, including improved wages and working conditions, a reduction in the number of industrial jobs in the U.S. economy, competition from nonunion businesses either within or outside the United States, and the apparent ineffectiveness of *strikes* in recent decades.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer.

_____ **1.** A labor union's attempt to withhold labor from a firm

_____ **2.** An impartial observer brought in when labor negotiations break down to suggest how to resolve differences

_____ **3.** The process by which representatives of a union and an employer negotiate wages, employee benefits, and working conditions

_____ **4.** A state law that says workers do not have to join a union or pay union dues to hold a job

_____ **5.** When labor negotiations break down and the public interest is involved, a neutral third party is brought in to impose a settlement both sides must accept

_____ **6.** The demand for a resource that arises from the demand for the product that resource produces

_____ **7.** One resource works with the other in production; a decrease in the price of one resource increases the demand for the other

_____ **8.** One resource can replace another in production; an increase in the price of one resource increases the demand for the other

_____ **9.** The wage at which the quantity of labor firms want to hire exactly matches the quantity workers want to supply

_____**10.** The value of output produced by a resource

_____**11.** Establishes a minimum amount that an employer must pay a worker for an hour of labor

_____**12.** A group of workers who join together to seek higher pay and better working conditions by negotiating a labor contract with their employers

_____**13.** Union efforts to force employers to hire more workers than demanded for a task

a. binding arbitration
b. collective bargaining
c. derived demand
d. equilibrium wage
e. featherbedding
f. labor union
g. mediator
h. minimum wage law
i. productivity
j. resource complements
k. resource substitutes
l. right-to-work law
m. strike

Review Economic Concepts

14. The demand for resources is derived from

a. the demand for products the resources are used to produce.

b. the demand for higher wages for workers.

c. the demand for profits by business owners.

d. the demand for taxes to pay for government services.

15. **True or False** Resource prices provide information to producers that allows them to use resources in a way that maximizes their value.

16. If two resources are __?__, an increase in the price of one will cause businesses to demand less of the other.

17. The market supply of labor will change as a result of each of the following *except*
    a. a change in the amount of wealth workers hold.
    b. a change in the conditions in which employees are expected to work.
    c. a change in the demand for products workers produce.
    d. a change in workers' tastes for being employed in a particular job.

18. **True or False** Some workers are better paid because they have acquired special training that makes their labor more valuable to employers.

19. Which of the following workers would be best paid?
    a. a worker who has not graduated from high school
    b. a worker who just completed a master's degree in English literature
    c. a worker who is willing to stay up all night to guard a bank's deposit box
    d. a worker who helped design Microsoft's Windows Vista software

20. __?__ takes place when a person is not employed because of his or her race, ethnicity, or gender.

21. **True or False** Membership in industrial unions is limited to workers with a particular skill.

22. When a labor settlement is imposed on management and a union by a neutral third party,
    a. there is a right-to-work law.
    b. binding arbitration has taken place.
    c. there has been mediation.
    d. there is likely to be a strike.

23. __?__ takes place when a contract requires management to hire more workers than it feels are necessary.

24. A craft union is formed when workers who all __?__ join together to form a union.
    a. have the same employer
    b. work in the same location
    c. work in a particular industry
    d. have the same skill

25. __?__ takes place when unions and management negotiate to reach a labor contract.

26. **True or False** In recent decades, union membership has declined.

Apply Economic Concepts

27. **Resource Substitutes** The Apex Pot company manufactures high-quality kitchen pans. Currently it employs 500 workers, who produce stainless steel pans one at a time on individual machines. It takes a worker six minutes to produce each item. The workers are paid $12 per hour for their labor. Apex managers have found that they can purchase machines that will produce products with equal quality automatically. One machine costs $200,000 but can produce one pan per minute. So far, management has chosen not to purchase any of the machines. The workers' contract is due to expire next month. Their union has asked to have the wage rate increased to $14 per hour. Apex management has stated that the firm cannot afford to pay them any more than they currently receive. What factors should each side consider during collective bargaining?

28. **Minimum Wage Laws** Imagine that you own a fast-food restaurant, which is in a competitive industry. The restaurant employs 20 workers, who are paid the minimum wage. Next month, Congress passes a law that will increase the minimum wage you must pay your workers by $1 per hour. What steps could you take to control your production costs and protect your profits?

29. **Labor Unions** Interview a friend or relative who is a member of a labor union. Ask why this person joined a union. Ask what the biggest benefit is of union membership. Write a paragraph summarizing your interview.

30. **Binding Arbitration** You are the president of a fire fighter's union in a large city. There is a law that provides for binding arbitration for vital public employees in your state. The current contract between your union and the city is about to expire. Your members want at least a 4 percent increase in their wages in each of the next three years. The city has offered a 2 percent raise per year. Negotiators have not been able to reach a decision. The city has said it will call for binding arbitration unless the union accepts its "final offer." If an arbitrator is called in, he or she might award the union more than the city's 2 percent offer. But, you know the city is in a financial bind. The arbitrator could award less than the 2 percent. What recommendation would you make to your members? Explain your reasons for this recommendation.

31. **Assess a Strike** Garbage collectors in several cities in a state went on strike for better wages and a continuation of their employer-paid medical insurance coverage. At that time, the state and many of its local governments had large budget deficits. They argued that they could not afford to pay the garbage collectors more and demanded that these workers contribute to the cost of their medical coverage. Write an essay that addresses two issues: (1) Should garbage collectors be allowed to strike? Why or why not? (2) Should the garbage collectors be forced to pay all or part of the cost for their medical insurance when it has been totally paid by their employers in the past?

32. **Sharpen Your Skills: Working with Percentages** The Bureau of Labor Statistics reports the average hourly wage rate for nonagricultural workers each year. Use the data in the table to calculate the percentage rate of change in the years from 2001 through 2005. Does there appear to be any relationship between the rate of change in hourly wages and the rate of growth in the value of total production in the economy? What might this have to do with the demand for labor?

Change in the Value of Total Output and Hourly Wage for Nonagricultural Workers, 2000–2005

Year	Rate of Growth in Value of Total Output	Hourly Wage Nonagricultural Workers	Change in Hourly Wage From Previous Year
2000	2.2%	$14.00	--
2001	2.4%	$14.53	--
2002	1.8%	$14.95	--
2003	2.0%	$15.35	--
2004	2.6%	$15.67	--
2005	2.8%	$16.11	--

Source: *Economic Indicators,* April, 2006, pp. 2 and 15.

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33. Access **EconDebate Online** at thomsonedu.com/school/econxtra. Click on the following policy debate: "Does an increase in the minimum wage result in a higher unemployment rate?" Choose one article that argues in support of increasing the minimum wage and one that argues against it. Summarize each article in a paragraph. Then write a paragraph explaining your opinion on this issue.

10 Financial Markets and Business Growth

10.1 Production, Consumption, and Time

10.2 Banks, Interest, and Corporate Finance

10.3 Business Growth



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CONSIDER

What's seed money, and why can't Farmer Patel grow anything without it?

Why are you willing to pay more at a movie theater than wait to rent the DVD?

Why do you repeatedly burn your mouth eating pizza, despite knowing the risk?

Why is a bank more likely to be called Security Trust than Benny's Bank?

Why do banks charge a higher interest rate on car loans than on home loans?

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10.1 Production, Consumption, and Time

Objectives

- Explain why production requires saving.
- Explain why people often pay more to consume now.
- Apply demand and supply analysis to the market for loans.

Overview

Time plays an important role in both production and consumption. From an entrepreneur's bright idea for a new product to its delivery to market, production takes time. For example, consider the textbook you are now reading. This book was years in the making and required dozens of specialists, including an author, a project manager, editors, supplement writers, designers, photographers, reviewers, typesetters, paper makers, printers, binders, and marketers. All this effort was made before a single copy was sold. During the long production process, how did these resource suppliers survive?

Key Terms

interest rate

demand for loans curve

supply of loans curve

market for loans

equilibrium interest rate

In the News

Banking on a Recovery After Katrina

When hurricane Katrina swept through the Gulf Coast in late August 2005, it had an unprecedented effect on the region's banking industry. Soon after the storm, many banks, some operating out of cars, opened quickly to supply cash and loans to individuals and local businesses. Banks always face a balancing act in trying to be flexible to serve their customers while adhering to government regulations. In the face of this crisis, some banks were making loans with little assurance that they would be repaid. Every Gulf Coast bank expects losses on defaulted loans because many of the businesses and homeowners in the area did not have flood insurance and their property is now worth little. Banks most likely to be hurt are the small financial institutions that rely on local investment and loans. Some banks probably won't survive. Larger, more diversified banks are better positioned to absorb losses. However, it is anticipated that the government may step in and help cushion the losses so that the banks can avoid bankruptcy. Despite obstacles, banks are playing a key role in the recovery of the area.

THINK ABOUT IT

Even though the demand for loans in the Gulf Coast region is high, should banks offer loans on favorable terms to people hurt by Katrina? Why or why not?

Sources: Gary Rivlin, "Tellers Are on the Front Line of the Recovery in New Orleans; A Bank Rebuilds: Regaining Confidence, *New York Times,* November 5, 2005; Bill Streeter, "Never Had Anything Like This Before," *ABA Banking Journal,* November, 2005.

Production and Time

Patel is a primitive farmer in a simple economy. Isolated from any neighbors or markets, he literally scratches out a living on a plot of land, using only crude sticks. While a crop is growing, none of it is available for current consumption.

Production Takes Time

None of the crop is ready for consumption until it grows. So to survive, while the new crop comes in, Patel must rely on food saved from prior harvests. The longer the growing season, the more Patel must have saved from prior harvests. In this simple example, it is clear that *production cannot occur without saving during prior periods.*



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Farmer Patel must decide whether to invest his time in making a plow. Does adding 50 more bushels a year outweigh the one-time cost of 200 bushels? If you were Patel, how would you decide?

Investment Takes Time

With his current resources of land, labor, seed corn, fertilizer, and some crude sticks, Patel grows about 200 bushels of corn a year. He soon realizes that if he had a plow—*a capital good*—his productivity would increase. Making a plow in such a primitive setting, however, would take time and keep him away from his fields for a year. Thus, the plow has an opportunity cost of 200 bushels of corn. Patel would be unable to survive this drop in production unless he has saved enough from prior harvests. The question is: Should he invest his time in the plow? The answer depends on the costs and benefits of the plow. You already know that the plow's opportunity cost is 200 bushels—the forgone output. The benefit depends on how much the plow will increase production and how long the plow will last. Patel figures that the plow will boost his yield by 50 bushels a year and will last his lifetime. In making the investment decision, he compares current costs to the future stream of benefits.

Capital Increases Labor Productivity

Rather than work the soil with his crude sticks, Patel produces capital to increase his future productivity. Making the plow is an investment of his time. For the economy as a whole, more investment means more capital goods, increasing the economy's ability to produce in the future. This growth can be shown by an expansion of the economy's production possibilities frontier. Advanced industrial economies invest more than other economies. These additions to capital accumulate over time. Figure 10.1 shows the value of capital goods in the United States in recent years. The value of business structures, which includes factories and office buildings, increased from $4.7 trillion in 1994 to $8.0 trillion in 2004. The value of business equipment, which includes machines, computers, and software, increased from $2.9 trillion in 1994 to $4.6 trillion in 2004. This

increase in capital makes U.S. workers more productive.

You can see from the Farmer Patel example why most production cannot occur without prior saving. *Production depends on saving because production of both consumer goods and capital goods takes time. This is time during which consumer goods being produced are not yet available for current consumption.*

Financial Intermediaries

To modernize the example, suppose Farmer Patel can borrow money. Many farmers visit the bank each spring to borrow enough "seed money" to survive until the crops come in. Likewise, other businesses often borrow at least a portion of the financial capital needed until output gets sold.

The **interest rate** is the price of borrowing—the annual interest expressed as a percentage of the amount borrowed. For example, if the interest rate is 5 percent, the interest charged is $5 per year for each $100 borrowed. The lower the interest rate, the lower the price of borrowing. The lower the price of borrowing, the more Farmer Patel and other producers are willing and able to borrow.

In a modern economy, producers need not rely exclusively on their own savings. They can borrow the funds needed to help finance a business.

NET Bookmark

Bloomberg.com's financial news network provides quick links to the latest key interest rates at its markets web site. Access this site through thomsonedu.com/school/econxtra. Click on "Rates and Bonds" under "Market Data." Analyze the trends in the key rates and mortgage rates over the one-year period.

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Ask the Xpert!

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Why are some rates of interest so much higher than others?

✓ CHECKPOINT

Why does production require saving?

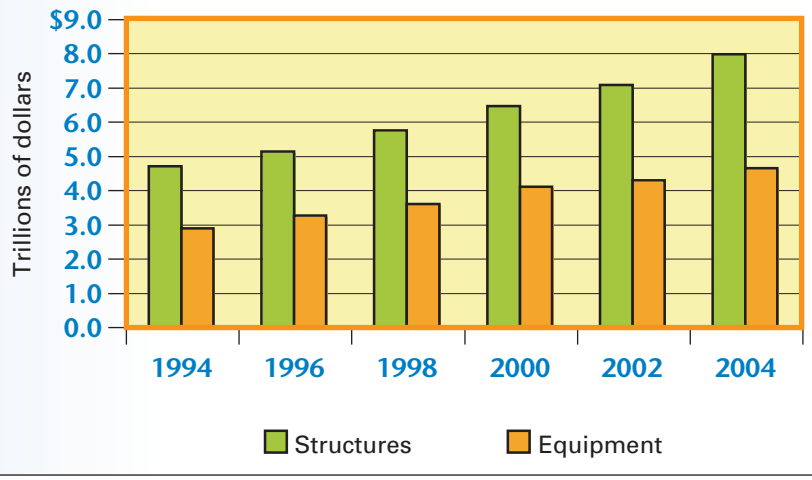
interest rate

Annual interest expressed as a percentage of the amount borrowed or saved

Value of Business Structures and Equipment in the United States — **Figure 10.1**

The combined value of business structures and business equipment increased by $5.0 trillion between 1994 and 2004.

Source: Developed from estimates in the U.S. Department of Commerce, *Survey of Current Business,* September 2005, Table 1, p. 15. Structures include factories, buildings, and other permanent business fixtures. Figures are adjusted to eliminate the effects of inflation.



Consumption and Time

Did you ever burn the roof of your mouth biting into a slice of pizza that hadn't sufficiently cooled? Have you done this more than once? Why do you continue to do this when you know what is likely to happen? You continue because that bite of pizza is worth more to you now than the same bite two minutes from now. You are so anxious to eat that pizza that you are willing to risk burning your mouth rather than wait until it can no longer harm you. In a small way, this reflects the fact that you and other consumers usually value *present* consumption more than *future* consumption.

Paying More to Consume Now

When you value present consumption more than future consumption, you are willing to pay more to consume now rather than wait. Prices often reflect your greater willingness to pay to consume sooner. Consider the movies. You pay more to see a movie at the theater rather than waiting to rent the DVD. The same is true for books. The hardback price is usually more than double what you would pay if you could wait for the paperback. Photo developers, dry cleaners, fast-food restaurants, convenience stores, and other suppliers advertise the speed of their services. They know that consumers are willing to pay more for earlier availability.

Thus, *impatience* is one reason you may value present consumption more than future consumption. Another is *uncertainty*. If you wait, something might prevent you from consuming the good. A T-shirt slogan captures this point best: "Life is uncertain. Eat dessert first."

One way to ensure that goods and services can be consumed now is to borrow money to buy these products. Home mortgages, car loans, student loans, personal loans, and credit cards are examples of household borrowing. People borrow more when the interest rate declines, other things constant. For example, home purchases increase when mortgage rates decline.

demand for loans curve

A downward-sloping curve showing the negative relationship between the interest rate and the quantity of loans demanded, other things constant

✓CHECKPOINT

Why are people often willing to pay more to consume now?

The Market for Loans

You already know that producers are willing to pay interest to borrow money: This borrowing finances the production of consumer goods and capital goods. The simple principles developed for Farmer Patel can be generalized to other producers.

The Demand for Loans

Firms borrow to help fund production and investment. Firms need money to pay for resources until output is produced and sold. Firms also need money to invest in capital, such as machines, trucks, and buildings. The interest rate is the cost of borrowing. The lower the interest rate, other things constant, the more firms are willing and able to borrow. So the demand for loans is a downward-sloping curve. It shows that firms borrow more when the interest rate declines.

Firms are not the only demanders of loans. Households borrow to pay for homes, cars, college tuition, and more. The lower the interest rate, the more willing and able households are to borrow. Therefore, households, like firms, borrow more when the interest rate declines, other things constant.

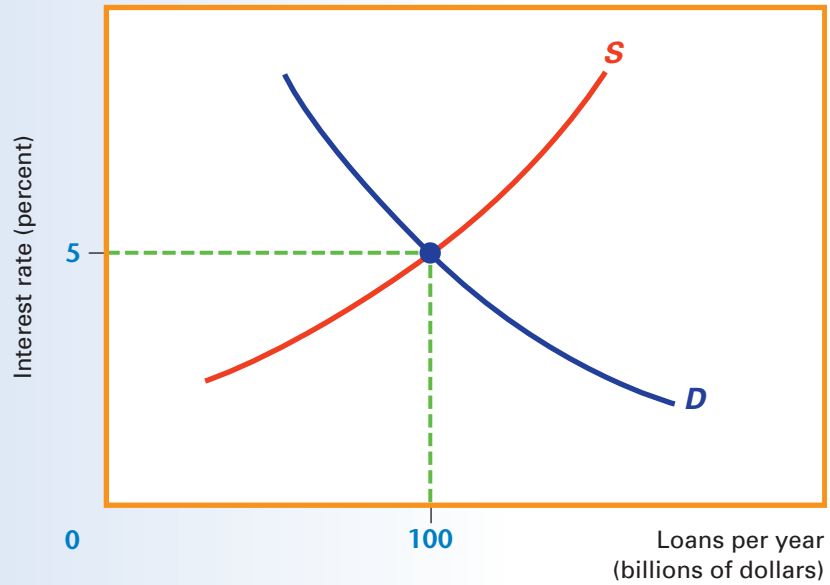
The downward-sloping **demand for loans curve**, labeled *D* in Figure 10.2, reflects the negative relationship between the interest rate and the quantity of loans demanded. The lower the interest rate, the greater the quantity of loans demanded, other things constant.

The Supply of Loans

What about the supply of loans? Because you and other consumers often value present consumption more than future consumption, you must be rewarded to postpone consumption. The amount saved during the year equals in-

Main Idea

Role of Interest Rates: Market for Loans — **Figure 10.2**



The quantity of loans demanded is inversely related to the interest rate. The quantity of loans supplied is directly related to the interest rate. The equilibrium interest rate, 5 percent, is determined at the intersection of the demand curve and supply curve for loans.

The interest rate rises or falls to balance the amount saved with the amount borrowed. The equilibrium interest rate determines the allocation of scarce resources in the economy between present uses and future uses. **In the market for loans, who trades present spending for future spending, and who trades future spending for the ability to spend now?**

come minus consumption. When they save a portion of their incomes in financial institutions such as banks, households give up present consumption in return for interest. *Interest is the reward for not consuming now.*

People delay present consumption for a greater ability to consume in the future. The higher the interest rate, other things constant, the greater the reward for saving, so the more people save. Savers are the suppliers of loans. The more saved, the greater the quantity of loans supplied.

The **supply of loans curve**, labeled *S* in Figure 10.2, shows the positive relationship between the interest rate and the quantity of loans supplied, other things constant. As you can see, this supply of loans curve slopes upward.

Market Interest Rate

The demand for loans and the supply of loans come together in the market for loans to determine the market interest rate, as in Figure 10.2. The **market for loans** brings together borrowers, or demanders of loans, and savers, or suppliers of loans, to determine the market rate of interest. The interest rate is the price of borrowing and the reward for saving. In this case, the **equilibrium interest rate** of 5 percent is the only one that exactly matches the intentions of savers and borrowers. Here, the equilibrium quantity of loans is $100 billion per year.

✓ CHECKPOINT

How does demand and supply analysis apply to the market for loans?

supply of loans curve

An upward-sloping curve showing the positive relationship between the interest rate and the quantity of loans supplied, other things constant

market for loans

The market that brings together borrowers (the demanders of loans) and savers (the suppliers of loans) to determine the market interest rate

equilibrium interest rate

The only interest rate at which the quantity of loans demanded equals the quantity of loans supplied

The demand for loans and the supply of loans come together in the market for loans to determine the market interest rate. In this photograph, representatives of the bank are working with the couple on the left to fill out a loan application. Who is demanding the loan, and who is supplying the loan?



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ETHICS IN ACTION

Predatory Lending

Consumer organizations currently are engaged in a legislative battle in Washington to combat predatory lending practices in home equity, cash advance, and automobile title loans. Consumer organizations are opposed by "subprime" lenders. These lenders target people or businesses who have credit problems and who can't qualify for the best loan terms or who generally are ignorant about what loan terms are available to them. "Subprime" refers to the high interest rate charged on such loans. These rates are so high that many borrowers may find themselves unable to make payments and thus defaulting on the loan. Such subprime rates can run as high as 24 to 36 percent per year versus the 6 to 9 percent offered to the best credit risks. At the federal level, subprime lenders are lobbying for legislation that would weaken generally strict state and local laws that protect consumers against unfair lending practices. Consumer organizations, on the other hand, argue that if a national standard is to be imposed, it should be a strict one that reinforces the consumer protection offered by state laws, not undermines that protection. In the most abusive instances, predatory lending activities have destroyed the equity that borrowers had built up in their homes. Equity is the part of a home's value that exceeds the mortgage debt. For example, if a home is now worth $150,000 but the mortgage debt is $100,000, the home equity is $50,000. Equity generally is created over many years as the home's value appreciates while the mortgage debt is gradually paid down. In far too many cases borrowers have lost their homes. Many, particularly older Americans, were persuaded or fooled by unethical salespeople into borrowing against their home equity, often to pay for unnecessary high-priced home renovations. For example, someone with $50,000 in home equity could borrow up to $50,000 using that home equity to back up the loan. If the loan could not be repaid, the lender could sell the house to pay off the loan.

THINK CRITICALLY

Do you think that laws against predatory lending should be at the state or local level or at the national level? Explain your answer.

Sources: Center for Responsible Lending, www.responsiblelending.org/abuses/index.cfm; Christopher J. Gearon, "Tug of War Over Predatory Lending," *AARP Bulletin,* April 2003.

Assessment 10.1

Key Concepts

1. Why couldn't you open up a pizza restaurant tomorrow if you wanted to?
2. Before the 1970s there were no hand-held electronic calculators. When these products first became available, they cost about $100 each. Why were people willing to invest so much in a calculator that could only add, subtract, multiply, and divide? How did the calculator change workers' productivity?
3. Why were many more consumers willing to buy automobiles when manufacturers offered special 0 percent interest rates?
4. Why do most people borrow funds to purchase a home or an automobile rather than wait until they can afford to pay cash?
5. What happens to the demand for loans that causes the equilibrium interest rate to fall during a downturn in the economy?

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Graphing Exercise

6. Home mortgage interest rates change over time with changes in the demand and supply for loans. Use data given in the table to draw a line graph that shows the annual average for new-home mortgage interest rates from 1999 through 2005. How much did this interest rate fall from 2001 through 2004? How important is a change of 1 percent in the mortgage interest rate to a person who wants to borrow $100,000 to buy a home?

New Home Mortgage Interest Rates, 1999–2005

Year	Interest Rate	Year	Interest Rate
1999	7.04%	2003	5.80%
2000	7.52%	2004	5.77%
2001	7.80%	2005	5.94%
2002	6.43%		

Source: *Economic Indicators,* May, 2006, p. 3.

Think Critically

7. **Financial Management** Most businesses rely on borrowed money. In the early 1980s, interest rates were very high in the United States, reaching levels of 20 percent or more. How would such high interest rates affect businesses and, therefore, the overall economy?
8. **Advertising** Businesses that market expensive consumer products such as refrigerators, computers, and home furnishings typically include statements about "easy payment plans" in their ads. Why do they include this information? If many consumers choose to borrow to finance their purchases, what will this do to the demand for loans and interest rates?

10.2 Banks, Interest, and Corporate Finance

Objectives

- Explain the role of banks in bringing borrowers and savers together.
- Understand why interest rates differ among types of loans.
- Identify and discuss a corporation's sources of financial capital.

Overview

You now understand why borrowers are willing to pay interest and why savers expect to be paid interest. Banks serve both groups. Banks are willing to pay interest to those who save because the banks can, in turn, charge more interest to those who need credit, such as farmers, home buyers, college students, and entrepreneurs looking to start or expand a business. Banks bring savers and borrowers together and try to earn a profit by serving both groups.

Key Terms

financial intermediaries

credit

line of credit

prime rate

collateral

initial public offering (IPO)

dividends

retained earnings

bond

securities

In the News

Banks Profit More from Internet Customers

The fastest-growing activity among Internet users during the last five years has been online banking. As Internet banking continues to expand, banks, trying to attract and keep customers, add to the services they make available online. Bank executives have been surprised about how much more profitable Internet customers are than those who walk in or drive up. Online customers carry higher balances, are more loyal than other customers, and require less time from bank employees. People who bank online also tend to log in to their bank's site more often than other customers visit their branch. This gives the banks more opportunities to convince these customers, who spend an average of ten minutes on the site, to do more than check their savings or checking accounts or transfer money. One innovation by Wells Fargo, a pioneer in online banking, has been to link their ATMs with the Internet. Wells Fargo hopes to upgrade their machines so that customers can access any of the 22 account services the bank offers. By doing so, it hopes that it will introduce more customers to what can be done online, such as its mortgage lending or brokerage services.

THINK ABOUT IT

Do you think that the increase in banking services available online and at ATMs will increase the number of people doing things such as applying for loans or investing in stocks? Explain your answer.

Source: Bob Tedeschi, "To Attract More Internet Customers, Some Banks Are Adding Services Available on Their Web Sites to Their ATMs," *New York Times,* March 7, 2005.

Banks as Intermediaries

Banks accumulate funds from savers and lend these funds to borrowers, thereby serving as **financial intermediaries** between the two groups. Savers need a safe place for their money. Borrowers need **credit**, which is the ability to borrow now, based on the promise of repayment in the future.

Serving Savers and Borrowers

Savers are looking for a safe place for their money. Banks try to inspire confidence among savers. Banks usually present an image of trust and assurance. For example, banks are more likely to be called First Trust or Security National than Benny's Bank or Easy Money Bank and Trust.

Banks gather various amounts from savers and repackage these funds into the amounts demanded by borrowers. Some savers need their money back next week, some next year, and others, only after retirement. Likewise, different borrowers need credit for different lengths of time. Some need credit only for a short time, such as the farmer who borrows until the crop comes in. Homebuyers need credit for up to 30 years. Banks, as intermediaries, offer desirable durations to both savers and borrowers.

Banks Specialize in Loans

As lenders, banks try to identify borrowers who are willing to pay enough interest and are able to repay the loans. Because of their experience and expertise, banks can judge the creditworthiness of loan applicants better than an individual saver could. Because banks have experience in drawing up and enforcing contracts with borrowers, they can do so more efficiently than an individual saver lending money directly to a borrower.

Thus, savers are better off dealing with banks than making loans directly to borrowers. The economy is more efficient because banks develop expertise in evaluating borrowers, structuring loans, and enforcing loan contracts. In short, *banks reduce the transaction costs of channeling savings to creditworthy borrowers.*

Reducing Risk Through Diversification

By lending funds to many borrowers rather than lending just to a single borrower, banks reduce the risk to each individual saver. A bank, in effect, lends a tiny fraction of each saver's deposit to each of the many borrowers. If one borrower fails to repay a loan, this failure will hardly affect a large, diversified bank. However, if an individual were to lend his or her life's savings directly to a borrower who defaults on the loan, that would be a financial disaster for the lender.

financial intermediaries

Banks and other institutions that serve as go-betweens, accepting funds from savers and lending them to borrowers

credit

The ability to borrow now, based on the promise of repayment in the future



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What are the benefits of saving your money in a bank?

e-conomics

IDENTITY THEFT

The Federal Trade Commission (FTC) reports that more than 40 percent of all consumer complaints it receives involve identity theft. Identity theft means someone assumes your identity to steal your money or obtain credit in your name. Many experts expect this problem to grow, due to easy access to personal information via the Internet and the minimal penalties given to those who are caught. One identity-theft ring stole the personal data and complete credit histories of more than 30,000 people, generating $2.7 million in fraud. The theft was traced to a credit bureau employee who used the Internet and stolen passwords in the scheme. To obtain a new credit card in your name, all an identity thief needs is your Social Security number and birth date. With a few additional bits of your personal data, the thief can get loans, start up utility accounts—even wipe out your bank accounts. Not only do you end up in debt with no money in the bank, but your credit is destroyed as well. Secondary effects of the theft include higher insurance and loan rates and problems finding employment. Businesses are doing what they can to stop the thieves. Some banks now include photos and special holograms on credit cards. Individuals also must take personal responsibility to avoid becoming victims. The experts' best advice is to avoid revealing any part of your Social Security number to anyone. Shredding papers with personal information and destroying your credit card receipts also is strongly advised. Once targeted, experts estimate that the average victim of identity theft can expect to lose approximately $50,000 and spend 330 hours over at least 6 months setting things right.

THINK CRITICALLY

How does identity theft affect interest rates on the credit cards you have?

Sources: Identity Theft Resource Center Web Site, www.idtheftcenter.org/index.shtml; "Take Charge: Fighting Back Against Identity Theft," Federal Trade Commission for the Consumer, www.ftc.gov/bcp/conline/pubs/credit/idtheft. htm #How; Purva Patel, *South Florida Sun-Sentinel,* "Credit Fraud Cases Growing Nationally," *Las Vegas Review Journal,* December 18, 2003, p. 9D.

Line of Credit

line of credit

An arrangement with a bank through which a business can quickly borrow needed cash

Businesses often need to borrow during the year to fund those stretches when sales are low. For example, many retail businesses sell most of their output during the Christmas shopping season. These firms may need to borrow to get through months when little is sold. Because of these fluctuations in cash needs, businesses negotiate a **line of credit** with a bank. This allows the business to get cash as needed during the year. For example, the business applies for a line of credit of, say, $200,000. If the application is approved, the business can draw on that line of credit as needed without having to fill out a loan application each time. This line of credit is equivalent to a consumer's credit-card limit.

NETBookmark

Access tips for safe Internet banking from the Federal Deposit Insurance Corporation (FDIC) web site through thomsonedu.com/school/econxtra. What can you do to protect your privacy if you choose to do your banking online? Write a paragraph explaining your answer.

thomsonedu.com/school/econxtra

✓CHECKPOINT

How do banks serve as financial intermediaries between borrowers and savers?

Why Interest Rates Differ

So far, the discussion has focused on the market rate of interest, as if there were only one interest rate in the economy. At any particular time, however, a range of interest rates coexists. For example, different interest rates apply to home mortgages, car loans, personal loans, business loans, and credit card balances. Figure 10.3 shows interest rates for loans in various markets. The lowest is the home mortgage rate, the rate charged those who borrow to buy a home. In the middle is the so-called **prime rate**, the interest rate lenders charge the most trustworthy business borrowers. The highest is the rate charged on credit card balances. Why do interest rates differ?

Risk

Some borrowers are more likely than others to *default* on their loans—that is, to not pay them back. Before a bank lends money, it usually requires that a borrower put up **collateral**. This is an asset owned by the borrower that can be sold to repay the loan in the event of a default. With business loans, any valuable assets owned by the firm serve as collateral. With a home mortgage, the home itself becomes collateral. With car loans, the car becomes collateral.

The more valuable the collateral backing up the loan, the less risky the loan so the lower the interest rate charged on that loan. The interest rate charged on car loans is higher than on home loans. A car loses its value more quickly than a home, and it can be driven away by a defaulting borrower. Thus, a car is not as good collateral as a home. Interest rates are higher still for personal loans and credit cards, because there usually is no collateral at all with these loans.

Duration of the Loan

The future is uncertain, and the further into the future a loan is to be repaid, the more uncertain that repayment becomes. Thus, under normal circumstances, as the duration of a loan increases, the interest rate charged increases to compensate for the greater risk. For example, the annual interest rate on a 10-year loan typically is higher than on a 1-year loan.

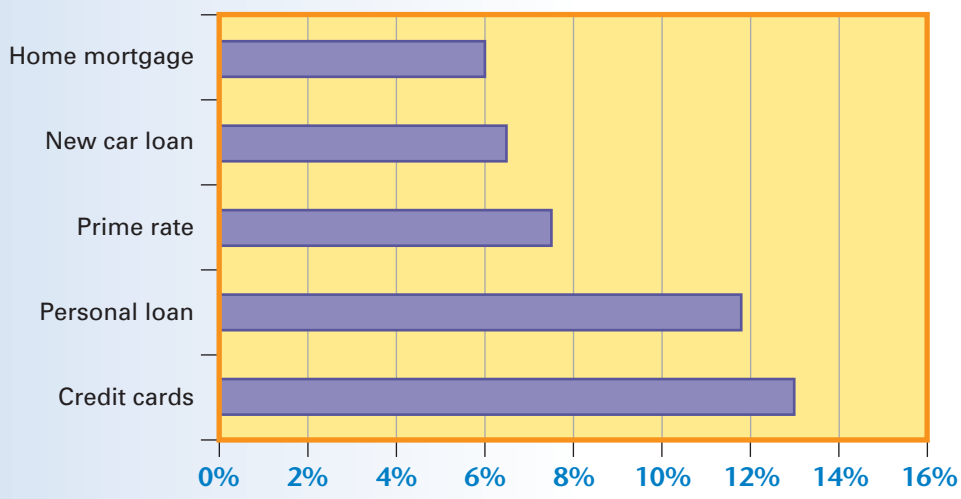
prime rate

The interest rate lenders charge for loans to their most trustworthy business borrowers

collateral

An asset owned by the borrower that can be sold to pay off the loan in the event the loan is not repaid

Interest Rates Charged for Different Types of Loans — **Figure 10.3**



Generally, the less collateral associated with a loan, the higher the interest rate will be. Personal loans and credit-card loans usually have no collateral and thus tend to have higher interest rates.

Source: Federal Reserve Board. Interest rates are for March 2006.

Investigate Your Local ECONOMY

Identify three banks in your area. Contact the banks or access their web sites to find the interest rates they currently apply to home mortgages, car loans, personal loans, business loans, and credit card balances. Compare the results in spreadsheet format. Share your results in class. Are the interest rates consistent among banks for each of the categories?

Cost of Administration

The costs of executing the loan agreement, monitoring the loan, and collecting payments are called the *administration costs* of the loan. These costs, as a proportion of the loan, decrease as the size of the loan increases. For example, the cost of administering a $100,000 loan is not much greater than the cost of administering a $10,000 loan. The relative cost of administering the loan declines as the size of the loan increases. This reduces the interest rate for larger loans, other things constant.

The Graphing Workshop

Tax Treatment

Differences in the tax treatment of different types of loans also will affect the interest rate. For example, the interest earned on loans to state and local governments is not subject to federal income taxes. Because people do not have to pay federal income taxes on this interest, they are more willing to lend money to state and local governments. Thus, the interest rate is lower.

✓ CHECKPOINT

Why do interest rates differ for different types of loans?

Corporate Finance

During the Industrial Revolution, labor-saving machinery made large-scale production more profitable. However, building huge factories filled with heavy machinery required substantial sums—more money than any single bank would lend. The corporate structure was the easiest way to finance such large-scale investments, and by 1920, corporations accounted for most employment and output in the U.S. economy.

You know that a corporation is a legal entity, distinct from its shareholders. The corporation may own property, earn a profit, borrow, and sue or be sued. Stockholders, the owners of the corporation, are liable for company debts up to the amount of their investment in the firm.

Corporate Stock

Suppose you have developed a recipe for a spicy chili that your friends have convinced you will be a best seller. You start a sole proprietorship called Six-Alarm Chili. As the founder, you are that firm's entrepreneur. Recall that entrepreneurs are profit-seeking decision makers. They begin with a good idea, organize a business to make that idea come to life and assume the risk of its operation.

Your chili company meets with early success. You believe, however, that you need to achieve economies of scale to remain competitive. To do that, you need to grow faster than your own savings or company profits would allow. To obtain the funds you need for expansion, you decide to incorporate the business. The newly incorporated company issues 1,000,000 shares of stock. You award yourself 100,000 shares. You, in effect, pay for your shares with "sweat equity," or all the hard work you did to get the company rolling. The remaining shares are sold to the public for $10 per share. This raises $9 million for the company.

Corporations issue and sell stock to fund operations and to pay for new plants and equipment. The initial sale of

stock to the public is called an **initial public offering (IPO)**. A share of corporate stock represents a claim on the net income and assets of a corporation. Each share also gives the shareholder one vote on corporate issues.

Corporations must pay corporate income taxes on any profit. After-tax profit is either paid as **dividends** to shareholders or reinvested in the corporation. Reinvested profit, or **retained earnings**, allows the firm to grow more. The corporation is not required to pay dividends. Young firms usually pay no dividends. They prefer instead to put any profit back into the firm so it can grow faster. For example, Six-Alarm Chili might use its retained earnings to enter additional geographic markets.

Once shares of stock are issued, their price tends to fluctuate directly with the firm's potential for earning a profit. People buy stock because of the dividends they hope to receive. They also hope the value of the stock will increase over time.

Corporate Borrowing

Your corporation can acquire financial capital by issuing stock, retaining earnings, or borrowing. To borrow money, the corporation can go to a bank for a loan. Such loans usually are for short durations—from a matter of months to two or three years. For longer-term borrowing, corporations will usually issue bonds. A **bond** is the corporation's promise to pay back the holder a fixed sum of money on the designated *maturity date* plus make annual interest payments until that date. For example, a corporation might sell bonds of $1,000 each, which promise the bond buyer annual interest of, say, $50 plus the $1,000 back at the end of 20 years. Corporate bonds have maturity dates as short as two years and as long as 30 years.

The payment stream to those who own bonds is more predictable than that for those who own stocks. Unless the corporation goes bankrupt, it must pay bondholders the promised amounts. On the other hand, stockholders are last in line when resource holders get paid. Because bondholders get paid before stockholders, bonds are considered less risky than stocks. Less risk means lower returns. Stocks usually yield a higher return than bonds.

Securities Exchanges

Both stocks and bonds are called **securities**. In the case of a share of stock, the security shows how much of the corporation the stockholder owns. In the case of a bond, it shows how much the corporation owes the bondholder. Ownership of securities is reflected by pieces of paper or by electronic entries in an online investment account.

Once corporations have issued stocks and bonds, owners of these securities are usually free to resell them on *security exchanges*. In the United States, there are nine security exchanges registered with the Securities and Exchange Commission (SEC), the federal body that regulates securities markets. The largest is the New York Stock Exchange, which trades the stock of more than 2,700 major U.S. corporations. All transactions occur on the trading floor in New York City. In addition there are more than a dozen electronic exchanges, the largest of which is the NASDAQ, which trades more than 3,200 corporate stocks, many of them technology companies. NASDAQ, like other electronic markets, is not a physical place, but a telecom-



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Stock certificates show how much of the corporation a shareholder owns. How does the information on a stock certificate differ from the information on a bond certificate?

initial public offering (IPO)
The initial sale of corporate stock to the public

dividends
That portion of after-tax corporate profit paid out to shareholders

retained earnings
That portion of after-tax corporate profit reinvested in the firm

bond
A contract promising to repay borrowed money on a designated date and pay interest along the way

securities
Corporate stock and corporate bonds

munications network linking market traders.

Nearly all the securities traded each day are *secondhand securities* in the sense that they have already been sold by the corporation. Therefore, the bulk of daily transactions do not finance firms in need of investment funds. The money goes from a securities buyer to a securities seller. By providing a *secondary market* for securities, exchanges enhance the *liquidity* of these securities—that is, the exchanges make the securities more easily sold for cash. This ready conversion into cash makes securities more attractive.

More than half the trading volume on major exchanges is done by *institutional investors,* such as banks, insurance companies, and mutual funds. A *mutual fund* issues stock to individual investors and with the proceeds buys a portfolio of securities.

The secondary market for stocks also determines the current market value of a corporation. The market value of a firm at any given time can be found by multiplying the share price by the number of shares outstanding. The share price reflects the current value of the expected profit. For example, General Electric, one of the most valuable U.S. corporations, had a market value of $369.2 billion at the close of business on April 12, 2006. At that time, the market value of all publicly traded U.S corporations was more than $18 trillion.

✓ CHECKPOINT

What are the sources of financial capital for a corporation?



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Buyers and sellers of securities come together through their representatives in the trading room of stock exchanges. Why are most securities transactions said to take place in the secondary market for securities?

Assessment 10.2

Key Concepts

1. Why are banks often unwilling to provide mortgage loans to people who want to purchase homes in urban neighborhoods with high crime rates and decreasing home values?
2. Would you rather lend a friend $50 until she gets paid tomorrow or until the end of the school year when she hopes to find a summer job? What does this tell you about the interest rates that are charged for short- and long-term loans?
3. Why would a corporation prefer to raise funds by selling stock than by borrowing money from a bank?
4. Why are stock exchanges necessary for corporations to successfully market stocks to the public?

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Graphing Exercise

5. Corporations sell new issues of stock to the public to finance expansion and to obtain operating funds. The amount of new stock sold is one indicator of how much business activity is taking place in the economy. Construct a bar graph from the data in the table that shows the value of new stock sold by U.S. corporations between 1999 and 2003. What does your graph tell you about the U.S. economy during these years?

New Public Stock Issues, 1999–2003
Values in billions of dollars

Year	New Stock Issues
1999	$217.4
2000	$311.9
2001	$230.6
2002	$170.7
2003	$182.4

Source: *Statistical Abstract of the United States,* 2003, p. 755, and 2006, p. 772.

Think Critically

6. **History** Investigate the development of the NASDAQ market. Why have many high-tech corporations chosen to be listed on the NASDAQ rather than on a centralized exchange, such as the New York Stock Exchange?
7. **Communication** Identify a publicly traded corporation that does business in your community. Imagine that this firm wants to raise funds by issuing new stock. Write a letter that could be sent to potential investors that explains why they should consider buying shares of this firm's newly issued stock.

Sharpen Your Skills



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Make Inferences

One of the most important factors businesses consider when they decide whether to make an investment is the interest rate they must pay to borrow funds. Large businesses pay the *prime rate.* Smaller firms usually pay prime plus one or two percent. The prime interest rate often is influenced by the Federal Reserve System (the Fed). If the Fed wants to encourage businesses to borrow and invest more money, it can push the prime interest rate down. If it wants businesses to invest fewer dollars, the Fed can pull the prime rate up. The table indicates the average prime interest rates charged by banks from 1996 through 2005. What do these data show about the Fed's interest-rate policies in these years?

Apply Your Skill

1. Suppose that economic conditions improve by 2012 and the economy is booming. What would this do to the demand for loans, the supply of loans, and the level of interest rates that the Fed would like to have banks change? Considering all of these factors, what would you expect to happen to interest rates under these conditions? Explain your reasons.
2. Suppose Congress passes a law that eliminates the federal income tax on interest income. As a result, individuals and banks are able to keep all the interest income they receive. What would this do to the supply of loans available and the prevailing interest rates charged to those who borrow?

Prime Interest Rates Charged by U.S. Banks, 1996–2005

Year	Prime Interest Rate	Year	Prime Interest Rate
1996	8.27%	2001	6.91%
1997	8.44%	2002	4.67%
1998	8.35%	2003	4.12%
1999	8.00%	2004	4.34%
2000	9.23%	2005	6.19%

Source: *Economic Indicators,* May, 2006, p. 30.

10.3 Business Growth

Objectives

- Recognize the role of profit and franchising in business growth.
- Identify the types of corporate mergers and the four merger waves that occurred during the last century.
- Examine the multinational corporation as a source of corporate growth.

Overview

Some small business owners, such as grocers, plumbers, or pizza makers, are quite content running a small operation. They have no plans for expanding the business. However, many entrepreneurs who develop a profitable business want to see the business grow. Perhaps the business needs to grow to achieve economies of scale or to become more competitive in its market. Maybe the owner believes the product could be profitably sold across the country or around the world. Whatever the reason, owners often believe that growth is the desirable path to greater profits.

Key Terms

vertical merger

conglomerate merger

multinational corporation (MNC)

In the News

From Burger Stand to Burger King

Burger King (BK) has nearly 11,500 restaurants—all but 1,000 of them franchises—in all 50 states and 65 countries. Selling more than 2.4 billion hamburgers each year, BK has become the second largest fast-food chain in the United States. Founded in 1954 by two Miami, Florida entrepreneurs, BK began selling hamburgers for 18 cents and Whoppers for 37. Reinvesting profits, the company grew to five locations in five years. By then the owners were ready to expand nationwide. To achieve this growth, they sold franchises. By 1967 BK had 274 restaurants, making it the third largest fast-food chain in the country. That year the owners sold their private company to Pillsbury. Pillsbury took BK international in the 1970s, and within a decade was operating in 30 countries. Pillsbury, along with BK, was bought in 1989 by British multinational conglomerate Grand Met. Grand Met merged in 1997 with another larger British conglomerate to form Diageo. When sales dipped, BK was again sold in 2002. Following this sale to three private U.S. firms, BK rebounded and moved its headquarters back to Miami. Then in 2006, for the first time in its history, Burger King sold stock to the public. Thus, a company that began as a hamburger stand in Miami morphed through a half-dozen business structures to become a $2 billion corporation and the second largest fast-food chain in the country.

THINK ABOUT IT

How did Burger King manage expansion during each phase of its growth?

Sources: "Burger King Corporation," *International Directory of Company Histories, Vol. 56,* St. James Press, 2004. Reproduced in *Business and Company Resource Center,* Farmington Hills, Mich.: Gale Group, 2006; Justin Fox, "The King Meets His Public," *Fortune,* March 6, 2006.

Profit and Growth

Profitability is the surest path to firm growth, regardless of the type of business. A profitable firm can reinvest earnings, and the more profit, the faster that firm can grow. This is true whether the firm is a sole proprietorship, partnership, or corporation. Firm owners are more willing to invest their own savings in a business if it is profitable. Profitable firms also find it easier to borrow the financial capital needed for expansion. Banks are more willing to lend to businesses that are profitable, because such firms are more able to pay back their loans.

To summarize, more profitable firms can grow faster because

1. more profit can be reinvested into the firm.
2. owners are willing to invest more of their own money in such firms.
3. banks are more willing to lend to such firms.

Corporate Profits and Growth

Corporate profitability opens up paths of growth that are not available to sole proprietorships or partnerships. The greater a corporation's profit, other things constant, the higher the value of shares on the stock market. The higher the value of the shares, the more money a corporation can raise by issuing new shares. Unprofitable corporations cannot sell new shares easily. More profitable corporations also find it easier to borrow from banks or to sell bonds. The more profitable the corporation, the lower the interest rate charged on bank loans and on corporate bonds.

Thus, financial markets allocate funds more readily to profitable corporations than to corporations in financial difficulty. Some corporations may be in such poor shape that they cannot issue stocks or bonds. *Securities markets promote the survival of the fittest by supplying financial capital to those firms that seem able to make the most profitable use of those funds.*

Franchises

One way a business with a successful product can grow quickly is by franchising that product. A *franchise* is a contract between a parent company (franchiser) and another business or individual (franchisee). For a fee, the parent company grants the franchisee the right to sell a certain product in a given region, such as Subway, Mrs Fields, or Dunkin' Donuts.

The franchiser supplies the retailer with a brand name, production and marketing experience, and other expertise. The parent firm can achieve economies of scale in research and development, building design, business practices, and promoting the brand name.

Franchises allow people with limited experience to enter a business. They are guided by the franchise plan, which can reduce their risk of failure. Most important is the brand name and reputation that comes with a franchise. Popular franchise programs also increase customer awareness of the business because many businesses operate in different locations using the same franchise name and promotions.

The franchise has been common for decades with gas stations and auto dealers. Of growing importance are franchise structures for hotels, fast-food outlets, and restaurants. There are now more than 4,000 franchisers in the United States.

NET Bookmark

McDonald's maintains a web page devoted to information about obtaining a franchise. Access this web page through thomsonedu.com/school/econxtra. Look over the FAQ file. How much cash does a potential franchisee currently need to qualify? How many partners can be involved in a McDonald's franchise? Who selects the sites? Who constructs the building?

thomsonedu.com/school/econxtra

✓CHECKPOINT

Why do more profitable firms usually grow faster?

Corporate Mergers

One way a firm can double its size overnight is by merging with a firm of equal size. Mergers represent the quickest path to growth.

Types of Mergers

Horizontal mergers occur when one firm combines with another firm making the same product, such as Exxon merging with Mobil. With a **vertical merger**, one firm combines with another from which it had purchased inputs or to which it had sold output. An example of a vertical merger would be one between a steel producer and an automaker. Finally, a **conglomerate merger** is a combination of firms in different industries, such as a merger between a plastics maker and an electronics firm. There have been four merger waves in this country over the last century. They are summarized in Figure 10.4.

First Merger Wave: 1887–1904

In the last half of the nineteenth century, two important developments caused firms to get big quickly. First, technological breakthroughs led to more extensive use of capital, increasing the minimum efficient size of manufacturing firms. Second, transportation costs declined as railroads increased from 9,000 miles of track in 1850 to 167,000 miles of track by 1890. *Economies of scale and cheaper transportation costs extended the geographical size of markets.* Firms grew larger to reach markets over a broader geographical area. Mergers offered an opportunity to get bigger quicker.

Mergers during this first wave tended to be horizontal. For example, the firm that is U.S. Steel today was created in 1901 through a billion-dollar merger that involved dozens of individual steel producers and two-thirds of the industry's production capacity. During this first wave, similar merger trends occurred in Canada, Great Britain, and elsewhere. This first merger wave created dominant firms, some of which still survive today, more than a century later.

vertical merger

One firm combines with another from which it had purchased inputs or to which it had sold output, such as a merger between a steel producer and an automaker

conglomerate merger

One firm combines with another firm in a different industry, such as a merger between a plastics maker and an electronics firm

Merger Waves in the Past Century — **Figure 10.4**

Wave	Years	Dominant Type of Merger	Examples	Stimulus
First	1887–1904	Horizontal	U.S. Steel, Standard Oil	Span national markets
Second	1916–1929	Vertical	Copper refiners with fabricators	Stock market boom
Third	1948–1969	Conglomerate	Litton Industries	Diversification
Fourth	1982–2000	Horizontal and vertical	Banking, telecommunications, health services, insurance	Span national and global markets, stock market boom

Four distinct merger waves took place in the United States between 1887 and 2000.

Second Merger Wave: 1916–1929

The first merger wave cooled with the introduction of antitrust laws. Because these laws restrained horizontal mergers, vertical mergers became more common during the second merger wave. This wave of mergers took place between 1916 and 1929. A vertical merger combines firms at different stages of the production process. For example, a copper refiner merges with a copper fabricator. The stock market boom of the 1920s fueled this second wave, but the stock market crash in 1929 stopped it cold.

Third Merger Wave: 1948–1969

The Great Depression and World War II slowed merger activity for two decades. The third merger wave began after the war. More than 200 of the 1,000 largest firms in 1950 disappeared by the early 1960s as a result of this merger wave. Between 1948 and 1969, many large firms were absorbed by other, usually larger, firms. The third merger wave peaked in a frenzy of activity between 1964 and 1969. During this time, conglomerate mergers accounted for four-fifths of all mergers.

Merging firms were looking to diversify their product mix and perhaps reduce costs by producing a variety of goods. For example, Litton Industries combined firms that made calculators, appliances, electrical equipment, and machine tools. As it turned out, this strategy didn't work very well. Conglomerate mergers stretched management expertise and lost the efficiency gains that spring from specialization and comparative advantage. The firm resulting from a conglomerate merger no longer focused on producing a particular product efficiently. It tried to produce all kinds of different products efficiently, which proved too challenging for some corporate executives.

Fourth Merger Wave: 1982–2000

The fourth merger wave began in 1982 and involved both horizontal and vertical mergers. Some large conglomerate mergers of the 1960s were undone during this latest wave as firms tried to focus on what they did best and sell off unrelated operations. About one-third of mergers during the 1980s resulted from *hostile takeovers,* where one firm would buy a controlling share of another against the wishes of the target firm's management. Hostile takeovers dwindled to less than one-tenth of mergers during the 1990s.

The break up of the Soviet Union in 1991 expanded markets around the world. Companies tried to achieve a stronger competitive position in global markets by merging with other firms here and abroad. Merger activity gained momentum during the latter half of the 1990s, with the dollar value of each new merger topping the previous record. Most mergers during this period were financed by the exchange of corporate stock and were fueled by a booming stock market.

The largest mergers in history occurred during the late 1990s and in 2000. During this time, the most merger activity took place in banking, radio and television, telecommunications, health services, and insurance. The latest merger wave ended with the stock market plunge that began in 2000.

Not all the mergers during this latest wave turned out well. Corporate scandals engulfed some companies that had used mergers aggressively to grow, such as Enron and WorldCom. Another big deal that experienced difficulties was the $103 billion merger of AOL and Time Warner. In 2002, the merged company lost $99 billion, a world record.

With a fading stock market and slumping economy, merger activity fell sharply after 2000, thus ending the fourth wave. For example, among Internet and software companies, the value of merger deals in 2002 was less than one-tenth their value in 2000.

✓ CHECKPOINT

What motivated the most recent wave of corporate mergers and what ended it?

Multinational Corporations

The developer of a successful product has a profit incentive to sell the product around the world. Because of high shipping costs and differences in labor costs, a firm often finds it more profitable to make products around the world as well. Many large corporations operate factories overseas and sell their products globally.

A corporation that operates globally is called a **multinational corporation (MNC)**. These companies also may be called transnational corporations, international corporations, or global corporations.

Running Multinationals

An MNC is usually headquartered in its native country and has affiliates in other countries. Most of the world's largest multinationals are headquartered in the United States, such as General Electric, General Motors, and Coca-Cola. Some are headquartered in Japan, such as Toyota, Honda, and Sony. Others are in Western Europe, such as Shell, BP, and Nestlé.

An MNC usually develops new products in its native country. It manufactures some or all of the goods abroad, where production costs are usually lower. For example, Whirlpool, the world's leading maker of major home appliances, is headquartered in the United States but operates in more than 170 countries. The company motto is "Every home . . . Everywhere."

The multinational can take advantage of a successful brand by selling it around the world. Multinationals benefit consumers and workers worldwide by supplying products and creating jobs. Multinationals also spread the latest technology and the best production techniques around the globe. This allows the firms located in less-developed countries to adopt cutting-edge technologies.

Problems of Multinationals

Running a multinational is more complicated than running a domestic firm. It requires coordinating far-flung operations, adapting operations and products to suit local cultures, and coping with different business regulations, different tax laws, and different currencies.

Union leaders in the United States have claimed that multinationals are hiring workers overseas because wages

multinational corporation (MNC)
A large corporation that makes and sells its products around the world



Span the Globe

Doing the Ford Shuffle

In a move enhancing the integrated nature of its international operations, Ford Motor Company acquired the remaining 15 percent of outside ownership interest in Ford India during 2004–2005. The stock acquisition made Ford India a wholly owned subsidiary of the U.S. automaker. The move came on the heels of a 21 percent increase in Ford India sales over the previous year. It was accompanied by the announcement of the parent company's $75 million dollar investment of capital in Ford India to further develop the subsidiary, which is fast becoming an important hub of Ford's international operations. The Ford India plant produces more than 28,000 vehicles per year. Of these, the mid-size sedan Ikon and the urban activity vehicle Fusion are fully manufactured at the plant. Many of the Ikons are exported to Ford distributors in South Africa, China, and Mexico. The Indian plant also assembles the sports utility vehicle Endeavor, which is brought in kit form from Ford's plant in Thailand. Ford India also imports for sales in India the luxury vehicle Mondeo, which is fully built in Ford's plant in Belgium. Ford's global reach reflects the company's efforts to keep costs down in what has become one of the most competitive industries in the world.

THINK CRITICALLY

What benefits do you feel Ford Motor Company gains from this shuffling of its products from one national market to another?

Source: "Ford India Posts Reduced Net Loss in 2004–2005," *Financial Times,* December 29, 2005.

TeamWork

In small groups, identify and debate the controversies involving multinational corporations. Do the benefits of multinationals to consumers and workers worldwide outweigh the problems associated with their operation?

there are lower. It's true that wages are lower in poorer countries. However, the wages paid there by multinationals are usually higher than wages offered by local employers. Some experts say workers in those poorer countries are better off because multinationals provide jobs that offer relatively good wages. U.S. multinationals export more to their foreign affiliates than they import from their foreign affiliates. As a result, foreign operations may tend to *create* U.S. jobs on balance.

Some critics also charge that multinationals have too much influence on the culture and the politics in the countries where they operate. However, foreign production by U.S. multinationals account on average for less than 4 percent of the value of all production in the countries in which they operate. Of the countries where U.S. multinationals account for the largest share of output, most are not poor countries but advanced economies such as Canada, the United Kingdom, and the Netherlands. Advanced economies would seem to be less affected by cultural or political influences by U.S. multinationals.

✓ CHECKPOINT

Why do firms become multinational corporations?



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Of the countries where U.S. multinationals account for the largest share of output, most are advanced economies such as the Netherlands. What do you think would be the benefits to advanced economies of the presence of U.S. multinationals?

Assessment 10.3

Key Concepts

1. Why are some people willing to invest in new firms that have not yet made any profit and do not expect to earn a profit for several years?
2. Suppose you have inherited $50,000 and want to use the money to start a business. Would you rather organize the business by yourself or purchase a franchise? Explain your reasons.
3. Do you think mergers are more often helpful or harmful for consumers? Explain your reasons.
4. When firms merge, they often lay off some workers to reduce their costs. Is it possible that this could be good for the economy?
5. Why have multinationals tended to "level the playing field" among workers and businesses in different nations?

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Graphing Exercise

6. Mergers have an important impact on the U.S. economy, and they can be a sign of economic activity as well. More mergers tend to take place when the economy is booming and stock prices are high. They are less likely to occur when businesses are not earning good profits or when it is difficult to obtain funding to finance mergers. Use the data in the table to draw two bar graphs of merger activity in the U.S. economy from 1990 through 2003. One graph should show the number of mergers that took place. The other should show their value. What do your graphs show about economic conditions in the United States during these years?

Mergers with a Value in Excess of $5 Million, 1990–2003

Year	Number of Mergers	Value of Mergers in Billions of Dollars
1990	4,239	$150
1995	4,918	$206
2000	11,169	$3,440
2003	7,743	$1,318

Source: *Statistical Abstract of the United States,* 2006, p. 520.

Think Critically

7. **Business Management** Many firms that offer franchise opportunities promote their organizations on the Internet. Identify a particular franchise business that exists in your community. Search the Internet for information about this franchise. What does the organization offer its members? What is the cost of becoming a franchisee? Would you ever consider starting this type of business yourself?

movers + shakers

Mark Melton *Melton Franchise Systems Inc.*

Mark Melton readily admits that cleaning offices is not a glamorous job. "But it's stable, year-round, and highly sought after, and no technology is going to make the industry obsolete," he says. He should know. He's the owner of Melton Franchise Systems, a multimillion-dollar empire that sells franchises of Coverall Cleaning Concepts to aspiring entrepreneurs in California. The owner of a Coverall Cleaning Concepts franchise provides cleaning services to office buildings, industrial complexes, medical facilities, banks, and department stores in their territory.



SUPPLIED PHOTO

For about $12,000, with $6,000 payable up front, the buyer of a franchise receives a Coverall Cleaning Concepts protected territory with an initial client base, ten weeks of training, and assistance with marketing and sales. New franchise owners are guaranteed $2,000 in monthly income from their clients and are encouraged to develop new clients in their territory. They pay Melton a 15 percent royalty fee. Currently Melton supports 400 franchise owners, servicing more than 2,400 customers, from Los Angeles to San Francisco.

In 2005, Melton was recognized by *Inc.* magazine as one of "26 Entrepreneurs We Love and What You Can Learn from Them." Melton shared the recognition with such entrepreneurs as Michael Dell, Martha Stewart, and Diane von Furstenberg. He was especially recognized for the many Hispanic and Hmong (from Southeast Asia) immigrants who have gotten their start through Melton's franchises. The magazine article stated, "What makes a Melton franchise an accessible route into the ownership society is the low barrier to entry." It adds, "Some go-getters have boosted their monthly billings to $10,000."

Ted Elliott, President and CEO of franchisor Coverall Cleaning Concepts, said, "Mark Melton's dedication to giving people a shot at the American Dream makes him a great role model." One of Melton's franchisees had been an X-ray technician in Guatemala before moving to California to work as a janitor. He used his tax refund to purchase a franchise from Melton, beginning with three clients. "Now I have 13 clients," he says. "Owning a business makes me feel like part of the United States."

SOURCE READING

Why is franchising good for each of these people: Ted Elliott, Mark Melton, someone who purchases a single Coverall franchise?

ENTREPRENEURS IN ACTION

Imagine you are interested in opening a fast-food restaurant specializing in Mexican food. You must decide whether to open your own restaurant or buy a franchise of an existing chain. Write down two advantages and two disadvantages of each option.

Sources: www.coverall.com; www.inc.com/magazine/20050401/26-melton.html; www.coverallusa.com/aboutus.php

CONNECT TO HISTORY



United States Steel

On December 12, 1900, Charles M. Schwab, president of the Carnegie Steel Company, spoke before a group of 80 industrial executives at the University Club of New York. He discussed the advantages of consolidation in such industries as steel. Whether Carnegie Steel owner Andrew Carnegie encouraged Schwab to make the speech—or if Carnegie was even in attendance—is not known. Within five months, however, the largest corporation in the world, United States Steel, was created.

The U.S. steel industry was growing quickly during the last two decades of the nineteenth century. In 1880, the United States produced only half as much crude pig iron as Britain. By 1900, it was making 50 percent more than Britain, as production rose from 4 to 14 million metric tons. Up to 1880, steel production was driven by the railroad industry, and 85 percent of production went to making rails. By 1900, rail production had increased almost 300 percent, but rails represented only 31 percent of the rolled steel output.

As demand grew, advantages in economies of scale became apparent. However, integrating the various stages of production and modernizing plants to achieve the economies were costly. Some in the industry viewed acquisition as a safer method of growth. Still, as long as prices remained high, success was insured for most steel producers. When competition turned more predatory, however, prices dropped, causing the smaller, weaker companies to struggle.

Consolidation of the industry already had begun by 1900. Many of the companies that specialized in finished steel were combining horizontally as the market diversified. Sheet making, wire making, and tube making were just a few of the activities that were subject to mergers. For these companies, most of the semi-finished steel was supplied along regional lines by one of two steel-producing giants—Federal or Carnegie Steel.

Two developments threatened to upset this arrangement. First, some of the companies that made finished steel began trying to reduce costs by producing their own steel. Some new companies were formed just to supply steel to these finishing companies. The reaction of Federal Steel and Carnegie Steel was to go into the finished steel business as well. At the threat of cutthroat competition, smaller companies feared that lower profits would destroy them.

J.P. Morgan was in attendance during Schwab's University Club speech. Morgan had been involved in the formation of both Federal Steel and National Steel, and railroads were an important part of his business empire. Morgan recognized that he could secure the financial success of his companies by following Schwab's proposal. After the speech, Morgan pulled Schwab aside and spoke with him for half an hour. He followed up the conversation with a meeting a few weeks later. Morgan secured a list of the companies Schwab had proposed for consolidation in his speech. The list also included values for what each company was worth. Morgan then asked Schwab to find out the amount for which Carnegie would sell his steel company. Carnegie came up with a figure of $480 million. Morgan accepted Carnegie's price, and U.S. Steel was created on April 1, 1901.

THINK CRITICALLY

Economies of scale were critical to the success of U.S. Steel. Still, some believe that the firm eventually became too large and difficult to manage. Its plants were spread over a large area. Also, because the company was profitable, it was hard to justify modernizing old plants. What kind of diagram would illustrate economies of scale? Draw a suitable diagram and show the effect of economies of scale in the long run.

10 Chapter Assessment

Summary

10.1 Production, Consumption, and Time

a It takes time to produce goods and services. Investments in capital can increase labor productivity but also require time and an accumulation of savings to use while investments are being made. Financial intermediaries help financial capital flow from savers to borrowers.

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b Consumers generally value current consumption more than future consumption. This can be seen in their willingness to pay interest to borrow funds that allow them to consume now. A *demand for loans curve* slopes down. As interest rates increase, the amount of loans demanded decreases.

c Loans are supplied by people willing to give up current consumption to consume more later. Interest is their reward for giving up current consumption. The higher the interest rate, the more money will be made available for loans. This is why the *supply of loans curve* slopes up. As interest rates increase, the amount of loans supplied also increases.

10.2 Banks, Interest, and Corporate Finance

a Banks act as *financial intermediaries* when they accumulate funds from savers and lend these funds to borrowers. By depositing funds in banks, savers earn interest. The banks then lend these funds at higher interest rates to borrowers that have been evaluated for their creditworthiness. Even if one borrower defaults, other borrowers are still likely to keep up their repayments.

b Interest rates differ for many reasons. The most important reason is the risk associated with a loan. Higher risks require borrowers to pay higher rates of interest. Other factors that influence interest rates include the duration of the loan, its cost of administration, and the way in which interest is taxed.

c Corporations raise money in a variety of ways. They may sell stock or corporate bonds to the public. Funds received from the sale of stock do not have to be repaid. *Dividends* will be paid on stock only when the corporation's board of directors chooses to do so. *Bonds* are debts of the business that must be repaid with interest, regardless of whether the firm earns a profit. Transactions of corporate stocks are carried out on stock exchanges.

10.3 Business Growth

a Businesses that are profitable are better able to grow than those that are not profitable. Profits may be reinvested in a firm. Banks are more likely to make loans to firms that are profitable. Individual investors are more likely to purchase stocks or bonds issued by profitable firms.

b Some people go into business by purchasing a franchise. These businesses benefit from having an established name and a successful business plan. The franchisees typically receive training from the franchiser. Although franchises have a better chance of succeeding, there are significant fees that must be paid to the franchiser.

c There have been four waves of mergers in U.S. history. Although most mergers have created stronger, more successful businesses, some have not. Some giant mergers of the 1990s lost billions of dollars, and some of these mergers were dissolved.

d In recent years, many corporations have expanded beyond the borders of any individual nation. These *multinationals* often are able to market their products in many countries. It has been suggested that multinationals may exploit workers by producing goods and services in nations that have the lowest wage rates. But the wages offered by mulitinationals are typically higher than prevailing wages in those low-wage countries. Critics also claim that multinationals may inappropriately influence governments because of their great economic power.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** An asset owned by the borrower that can be sold to pay a loan in the event the loan is not repaid

_____ **2.** The interest rate banks charge their most trustworthy business borrowers

_____ **3.** Banks and other institutions that serve as go-betweens, accepting funds from savers and lending them to borrowers

_____ **4.** A large corporation that makes and sells products around the world

_____ **5.** An arrangement with a bank through which a business can quickly borrow needed cash

_____ **6.** Corporate stock and corporate bonds

_____ **7.** The portion of after-tax corporate profit that is reinvested in the firm

_____ **8.** The initial sale of corporate stock to the public

_____ **9.** The ability to borrow now, based on a promise of repayment in the future

_____ **10.** Annual interest as a percentage of the amount borrowed or saved

a. bond
b. collateral
c. conglomerate merger
d. credit
e. demand for loans curve
f. dividend
g. equilibrium interest rate
h. financial intermediaries
i. initial public offering (IPO)
j. interest rate
k. line of credit
l. market for loans
m. multinational corporation (MNC)
n. prime rate
o. retained earnings
p. securities
q. supply of loans curve
r. vertical merger

Review Economic Concepts

11. **True or False** Production depends on saving because it requires time to produce consumer goods.

12. The fact that people generally prefer to consume now rather than in the future is shown by their willingness to

a. pay tuition to attend college.

b. pay interest for an automobile loan.

c. pay for life insurance.

d. deposit their savings in a bank account.

13. The __?__ brings together borrowers and savers to determine the market interest rate.

14. **True or False** The more valuable the collateral backing a loan, the higher the interest rate charged on the loan.

15. When the quantity of money supplied for loans exceeds the quantity of money demanded for loans, there will be a

a. shortage of loans, and interest rates will soon fall.

b. surplus of loans, and interest rates will soon grow.

c. shortage of loans, and interest rates will soon grow.

d. surplus of loans, and interest rates will soon fall.

16. A(n) __?__ is extended to businesses by banks to provide them with funds during those months when their sales are low.

17. __?__ are profits that a corporation earns but does not pay to its stockholders in dividends.

18. Which of the following situations will cause a bank to charge a lower *interest rate*?
    a. A loan is to be paid off in 60 days instead of 3 years.
    b. A loan is used to purchase an automobile instead of a house.
    c. A loan is made to a person who just changed jobs rather than a person who has been employed at the same job for 10 years.
    d. A loan is made to a small new business instead of a very large old business.

19. Which is not a form of merger used by U.S. firms in the past?
    a. vertical mergers
    b. conglomerate mergers
    c. horizontal mergers
    d. diagonal mergers

20. **True or False** A firm's profits have little to do with that firm's ability to grow.

21. A corporation that operates globally is called a(n) __?__.

22. Which of the following statements about *multinational corporations* (MNCs) is not true?
    a. MNCs usually develop new products in their native countries.
    b. MNCs usually manufacture products in their native countries because costs usually are lower there.
    c. MNCs introduce new technologies to less-developed countries.
    d. MNCs usually benefit consumers and workers around the world by supplying products and creating jobs.

Apply Economic Concepts

23. **Different Types of Mergers** Organize these businesses into three groups as they would form horizontal, vertical, and conglomerate mergers. You may not need to use all of the firms to complete this activity.

    Ajax Trucking Co.

    Apex Super Markets

    Clean Soap Co.

    Dad's Ice Cream Co.

    Harold's Fruit Co.

    Joe's Wholesale Co.

    Mom's Detergent Co.

    Sue's Sandwich Co.

    XYZ Soap Co.

24. **Lines of Credit** Justin and Carla own a ski resort. All of their income is earned in the months between November and April, but they have expenses throughout the year. During the summer, they must repair their equipment and clear their ski trails. The table to the right shows their income and expenses from the end of last year's ski season through April of this year. Explain why Justin and Carla need a line of credit from their bank.

Justin and Carla's Income and Expenses

Month	Income	Expenses
May	$ 0	$ 42,810
June	$ 0	$ 38,291
July	$ 0	$ 36,743
Aug.	$ 0	$ 34,805
Sept.	$ 0	$ 40,283
Oct.	$ 0	$ 52,939
Nov.	$ 60,832	$ 66,380
Dec.	$134,640	$103,592
Jan.	$288,902	$154,021
Feb.	$275,010	$152,831
March	$152,345	$100,438
April	$ 56,832	$ 83,921
Total	$978,561	$907,054

25. **Sharpen Your Skills: Make Inferences** Many events may affect the total demand for loans. Consider each of the following situations. Determine whether each would cause the demand for loans to increase or decline, and what the likely result on interest rates would be. Explain each of your answers.

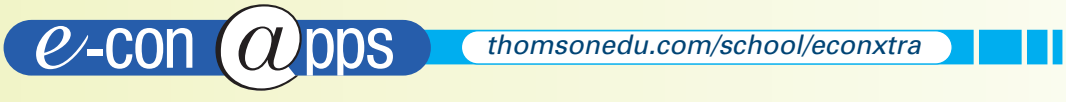
   a. Several large businesses fail, thousands of workers are laid off, and profits at many other businesses decline.

   b. There is an average 10 percent increase in the price of most consumer goods.

   c. There is a series of major hurricanes that destroys many buildings in the Gulf Coast region.

26. **Demand and Supply for Loans** On a separate sheet of paper complete the table, indicating what would happen in each situation by placing a (+) for increase, (−) for decrease, or (0) for stay the same, in each box to the right of the event. Also, explain the reasons for each of the signs you place in the table.

Event	Demand for Loans	Supply of Loans	Interest Rates
A new electric motor is invented that is expensive but uses only half as much electricity as older motors.			
There is a new baby boom, and millions of children are born.			
There is a downturn in the economy and many workers are laid off.			
Many foreigners decide they want to buy more U.S.-made products.			



27. Access **EconData Online** through thomsonedu.com/school/econxtra. Read the article entitled "Stock Prices: S&P 500." Write a paragraph that describes the S&P 500, and explain why this index is useful to investors.

Unit 4



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The National Economy



Economic Performance



Economic Growth



Economic Challenges

Since 1776, when Adam Smith inquired into the *Wealth of Nations*, economists have been trying to figure out why some economies prosper while others don't. Because a market economy is not the product of conscious design, it does not reveal its secrets readily. There is no clear blueprint of the economy, so policymakers can't simply push here and pull there to create prosperity for everyone. Still, economists are learning more every day about how the U.S. economy works. You, too, can discover the challenges and opportunities facing the largest and most complex economy in world history.

11 Economic Performance

11.1 Estimating Gross Domestic Product (GDP)

11.2 Limitations of GDP Estimation

11.3 Business Cycles

11.4 Aggregate Demand and Aggregate Supply



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CONSIDER

How is the economy's performance measured?

What's gross about the gross domestic product?

What's the impact on gross domestic product if you make yourself a sandwich for lunch?

How can you compare the value of production in one year with that in other years if prices change over time?

What's the business cycle?

What's the big idea with the national economy?

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11.1 Estimating Gross Domestic Product (GDP)

Objectives

- Describe what the gross domestic product measures.
- Learn two ways to calculate the gross domestic product, and explain why they are equivalent.

Overview

The Great Depression of the 1930s convinced economists and the government to get a better handle on what was happening with the economy. Economists began assembling huge quantities of data collected from a variety of sources across America. These data were organized and reported periodically by the federal government. The resulting system for measuring the nation's economy has been hailed as one of the great achievements of the twentieth century. Its primary developers won a Nobel Prize for their work.

Key Terms

economy

gross domestic product (GDP)

consumption

investment

aggregate expenditure

aggregate income

In the News

GDP Growth Estimates: A Work in Progress

In mid 2005 the average annual growth rate for the U.S. economy between 2001 and 2004 was revised down from 3.1 percent to 2.8 percent. This was a result of the ongoing revision process performed by the U.S. Bureau of Economic Analysis. When GDP growth figures are first released to the public, they are preliminary. They represent the government's best guess at the time about how much the U.S. economy has grown or not grown. A final figure will not be reached until months or perhaps years in the future as the bureau releases numerous revisions. For example, in early 2005 the Federal Reserve chairman described weak economic growth as a "soft patch." However, two months later, the GDP growth estimate was revised upward seven-tenths of a percentage point, or one-fifth higher than the preliminary estimates. The "soft patch" had disappeared. On average, once the dust settles, the GDP growth estimate typically has been revised one percentage point up or down. When the preliminary GDP figure is announced, one-third of the data is estimated. The actual numbers come in months, sometimes years, later. Subsequent revisions can throw a different light on how the economy is doing. For example, GDP estimates were revised downward between 2001 and 2004 because more reliable data on information technology investment became available. The preliminary nature of GDP growth estimates is one more reason why policymakers should be cautious in responding to the economy's short-run twists and turns.

THINK ABOUT IT

Why do you think it is important for the U.S. government to keep an accurate track of the size of the economy?

Source: Anna Bernasek, "A Number That's Meant to Be Second-Guessed," *New York Times*, July 31, 2005.

The National Economy

economy
The structure of economic activity in a locality, a region, a country, a group of countries, or the world

National economics, or macroeconomics, focuses on the overall performance of the *economy*. The term **economy** describes the structure of economic activity in a locality, a region, a country, a group of countries, or the world. You could talk about the Chicago economy, the Illinois economy, the Midwest economy, the U.S. economy, the North American economy, or the world economy.

Gross Domestic Product

An economy's size can be measured in different ways. The value of production, the number of people employed, or their total income can be measured. The most commonly used measure is the *gross product*. This is the market value of production in a geographical region during a given period, usually one year.

gross domestic product (GDP)
The market value of all final goods and services produced in the nation during a given period, usually a year

The **gross domestic product**, or **GDP**, measures the market value of all final goods and services produced in the United States during a given period, usually a year. GDP includes production in the United States by foreign firms, such as a Japanese auto plant in Kentucky. It excludes foreign production by U.S. firms, such as a General Motors plant in Mexico.

GDP measures the economy's total production of goods and services, from trail bikes to pedicures. GDP can be used to track the same economy over time. It also may be used to compare different economies at the same time.

National Income Accounts

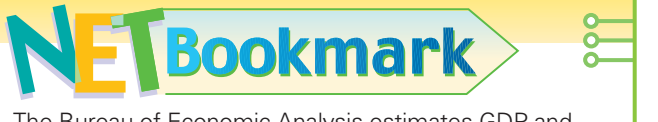
National income accounts organize huge quantities of data collected from a variety of sources across the United States. These data are summarized and reported periodically by the federal government. National income accounts keep track of the value of *final goods and services*. These are goods and services sold to the final, or end, users. A toothbrush, a pair of contact lenses, and a bus ride are examples of final goods and services.

Gross domestic product includes the value of only final goods and services. Your purchase of chicken from a grocer is reflected in GDP. When KFC purchases chicken, however, this transaction is not recorded in GDP because KFC is not the final consumer. Only after KFC deep fries that chicken and sells it to customers is the sale recorded as part of GDP.

No Double Counting

Intermediate goods and services are those purchased for additional processing and resale, such as the chicken purchased by KFC. This additional processing may be minor, as when a grocer buys canned goods to stock the shelves. The intermediate goods may be altered dramatically. For instance, oil paint costing $30 and a canvas costing $50 may be transformed into a work of fine art that sells for $10,000.

Sales of intermediate goods and services are excluded from GDP to avoid the problem of *double counting*. This is counting an item's value more than once. For example, suppose the grocer buys a can of tuna for $0.60 and sells it for $1.00. If GDP counted both the intermediate transaction of $0.60 and the final transaction of $1.00, that can of tuna would be counted twice in GDP. Its recorded value of $1.60 would exceed its final value of $1.00 by $0.60. Therefore, GDP counts only the final value of the product.



The Bureau of Economic Analysis estimates GDP and its components. Access the Gross Domestic Product web page of the BEA web site through thomsonedu.com/school/econxtra. Click on "Latest news release." What was the date of the latest news release? What happened to real gross domestic product in the quarter being examined? What reasons were given for this trend?

thomsonedu.com/school/econxtra

GDP also ignores most of the second-hand value of used goods, such as existing homes and used cars. These goods were counted in GDP when they were produced. However, the value of services provided by realtors and used-car dealers is counted in GDP. For example, suppose a new-car dealer gives you a $1,500 trade-in allowance for your used car. The dealer cleans and repairs the car, and then resells it for $2,500. The $1,000 increase in the car's value is included in GDP.

✓CHECKPOINT

What does the gross domestic product measure?

Calculating GDP

The national income accounts are based on the idea that *one person's spending is another person's income.* This is expressed in a double-entry bookkeeping system of accounting. Spending on final goods and services is recorded on one side of the ledger and income created by that spending is recorded on the other side. GDP can be measured either by total spending on U.S. production or by total income earned from that production.

GDP Based on the Expenditure Approach

The *expenditure approach to GDP* adds up the spending on all final goods and services produced in the economy during the year. The easiest way to understand the spending approach is to divide spending into its four components: consumption, investment, government purchases, and net exports.

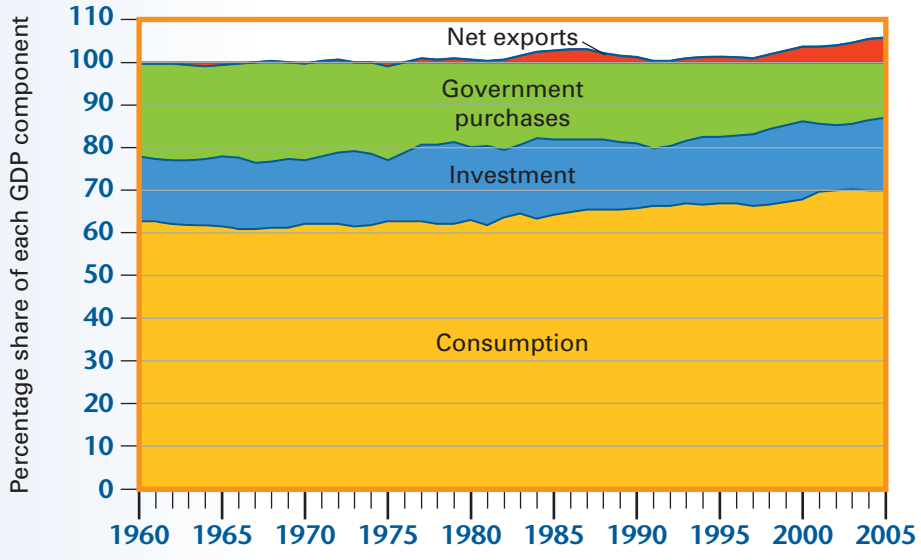
Consumption consists of purchases of final goods and services by households during the year. Examples of *services* include dry cleaning, haircuts, and air travel. Consumption of goods includes *nondurable goods,* such as soap and soup, and *durable goods,* such as televisions and furniture. Durable goods are those expected to last at least three years. Figure 11.1 shows the composition of U.S. spending since 1960. Over the most recent decade, consumption averaged 69 percent of all spending in the U.S. economy.

consumption
Household purchases of final goods and services

U.S. Spending Components as Percentages of GDP Since 1960 — **Figure 11.1**

Consumption's share of total U.S. spending increased slightly from 1960 to 2005. During the most recent decade, consumption averaged 69 percent of the total.

Source: Computed from annual estimates from the U.S. Department of Commerce.





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Which shoppers in these photos are shopping for durable goods, and which are shopping for nondurable goods?

investment

The purchase of new plants, new equipment, new buildings, new residences, and net additions to inventories

Investment consists of spending on new capital goods and additions to inventories. More generally, investment consists of spending on current production that is not used for current consumption. The most important category of investment is new *physical capital,* such as new buildings and new machinery purchased by firms and used to produce goods and services. Spending by households on new residential construction also is considered to be investment.

Changes in firms' inventories are another category of investment. Inventories include stocks of goods in process, such as computer parts. They also include stocks of finished goods, such as new computers awaiting sale. Investment changes more from year to year than any other spending component. During the last decade, investment averaged 17 percent of U.S. GDP.

In the national income accounts, investment does not include purchases of *existing* buildings and machines. Nor does it include purchases of financial assets, such as stocks and bonds. Existing buildings and machines were counted as part of GDP in the year they were produced. Purchases of stocks and bonds sometimes provide firms with the funds to invest. However, stocks and bonds are not investments. They are simply indications of ownership.

Government purchases include spending by all levels of government for goods and services—from clearing snowy roads to clearing court dockets, from library books to the librarian's pay. Government purchases at all levels averaged 18 percent of U.S. GDP during the last decade. Government purchases, and therefore GDP, exclude transfer payments such as those for Social Security, welfare, and unemployment. These transfer payments are outright grants from the government to the recipients and are not true purchases by the government or true earnings by the recipients.

The final component of the expenditure approach to GDP is net exports. This results from the interaction between U.S. residents and the rest of the world. Some spending for consumption, investment, and government pur-

chases goes for imports. However, spending on imports does not count as part of U.S. GDP. On the other hand, purchases of U.S. products by foreigners do count as part of U.S. GDP. To figure out the net effect of the rest of the world on GDP, the value of imports must be subtracted from the value of exports. *Net exports* equal the value of U.S. exports of goods and services minus the value of U.S. imports of goods and services.

The expenditure approach considers the nation's *aggregate expenditure.* Any time an economist uses the term *aggregate,* you can substitute the word *total* for it to determine the meaning. **Aggregate expenditure** equals the sum of consumption, *C,* investment, *I,* government purchases, *G,* and net exports, which is the value of exports, *X,* minus the value of imports, *M,* or $(X - M)$. Summing these spending components yields aggregate expenditure, or GDP:

$$C + I + G + (X - M) = GDP$$

The value of U.S. imports has exceeded the value of U.S. exports every year since 1976. This means U.S. net exports $(X - M)$ have been negative. Negative net exports means that the sum of consumption, investment, and government purchases exceeds GDP. You can see negative net exports in Figure 11.1. It is that portion of consumption, investment, and government purchases that exceeds 100 percent of GDP. During the last decade, negative net exports have averaged 4 percent of U.S. GDP. This means that the sum of consumption, investment, and government purchases has exceeded U.S. GDP by an average of 4 percent.

GDP Based on the Income Approach

The expenditure approach sums, or aggregates, spending on production. The income approach sums, or aggregates, income arising from that production. The *income approach to GDP* adds up the aggregate income earned during the year by those who produce that output. Again, double-entry bookkeeping ensures that aggregate output equals the

aggregate expenditure

Total spending on all final goods and services produced in the economy during the year



Span the Globe

Japanese Economic Revival Plan Working

Japan once was a more powerful economic force in the world. But as recently as 2002, the country had not yet recovered from more than a decade-long downturn in its GDP. Falling prices, lack of growth, and increasing unemployment continued. Japan's successful economy began to contract in the early part of the 1990s, when sky-high real-estate prices suddenly dropped. The drop in prices wiped out the value of much of the property that Japanese banks were using as security against business loans. To make matters worse, Japan's export-driven companies were under increasing pressure to reduce prices—and therefore profits. They faced intense competition from other Asian nations with much lower labor costs. In October 2002, just after its bonds had been downgraded by Moody's to the same status as those of Latvia and Poland, the Japanese government launched an economic revival plan. The plan involved a special loan program that rewarded companies that hired people who had been laid off. Its goal was to erase more than $336 billion of the banks' bad debts and create more jobs for Japanese workers. The hoped-for turnaround was slow in coming but, as of 2006, after two straight years of economic growth, prospects began looking up.

THINK CRITICALLY

How do you think creating more jobs for Japanese workers would help to raise the GDP in Japan?

Sources: "Analysts Drop Japan to Latvia Status," BBC News, May 31, 2002, http://news.bbc.co.uk/1/hi/business/2017886.stm; James K. Glassman, "The Sun Finally Rises," *Kiplinger's Personal Finance,* April 2006.

aggregate income
The sum of all the income earned by resource suppliers in the economy during a given year

aggregate income paid for resources used to produce that output. **Aggregate income** equals the sum of all the income earned by resource suppliers in the economy. Thus

Aggregate expenditure
= GDP
= Aggregate income

A finished product usually is processed by several firms on its way to the consumer. A wooden desk, for example, starts as raw timber, which usually is cut by a logging company. It is milled by a lumber company, made into a desk by a furniture maker, and sold to you by a retailer. The government avoids double counting either by focusing only on the market value of the desk when it is sold to the final user or by *calculating the value added at each stage of production.*

The *value added* by each firm equals that firm's revenue minus the amount paid for intermediate goods, This is the amount spent on inputs purchased from other firms. The value added at each stage represents income to individual resource suppliers at that stage. *The sum of the value added at all stages equals the market value of a final good. The sum of the value added for all final goods and services equals GDP based on the income approach.*

For example, suppose you buy a wooden desk for $200, which is the final market value counted in GDP. Consider the production of that desk. Suppose the tree that gave its life for your studies was cut into a log that was sold to a lumber mill for $20. That log was milled into lumber and sold for $50 to a manufacturer, who made your desk and sold it for $120 to a retail store. The retailer then sold it to you for $200. If all these transactions were added up, the total of $390 would exceed the $200 market value of the desk.

To avoid double counting, you include only the value added at each stage of production. In this example, the logging company adds $20, the miller $30, the manufacturer $70, and the retailer $80. The total value added is $200, which also is the selling price of the desk. All this is illustrated in Figure 11.2.

✓ CHECKPOINT

What are two ways of calculating gross domestic product, and why are they equivalent?

Computation of Value Added for a New Wooden Desk — **Figure 11.2**

The value added at each stage of production is the sale value minus the cost of intermediate goods, or column (2) minus column (3). The sum of the values added at all stages equals the market value of the final good, shown at the bottom of column (4).

(1) Stage of Production	(2) Sale Value	(3) Cost of Intermediate Goods	(4) Value Added
Logger	$ 20	——	$ 20
Miller	$ 50	$ 20	$ 30
Manufacturer	$ 120	$ 50	$ 70
Retailer	$ 200	$ 120	$ 80
	Market value of final good		$200

Assessment 11.1

Key Concepts

Xtra! Study tools
thomsonedu.com/school/econxtra

1. Why should people care about the amount of production that takes place within the economy?
2. Why wouldn't your efforts add $100 to GDP if you made a table that you sold for $100?
3. Why are the values of spending and income always equal?
4. In what way are investment by businesses and some spending by the government similar?
5. What would your teacher mean if she said, "The aggregate income of all students in this class was $52,315.28 last year?"

Graphing Exercise

6. Use the data in the table to construct two grouped bar graphs showing the percentage of spending for $C + I + G + (X - M)$ for the U.S. GDP in 1970 and 2005. The vertical axis should show the percent of GDP purchased. Each of the spending types should be represented by bars placed along the horizontal axis. Make separate bars for each of the different types of spending. Show the negative net exports in 2005 by extending that bar below the horizontal axis of the graph. What conclusions about changes in the economy can you draw from your graphs?

Different Types of Spending in 1970 and 2005
Values in Billions of Dollars

Spending	1970	% of GDP	2005	% of GDP
Consumption	$ 648.1	62.6%	$ 8,742.4	70.2%
Investment	$ 150.2	14.5%	$ 2,057.4	16.5%
Government	$ 236.1	22.8%	$ 2,372.8	19.0%
Net Exports	$ 1.2	0.1%	$ −716.7	−5.7%
Total GDP	$1,035.6	100.0%	$12,455.9	100.0%

Think Critically

7. **Mathematics** Calculate the final price consumers would pay for a gallon of gasoline given the following costs. How does this example demonstrate the need for calculating value added when measuring GDP?
   - Crude oil is extracted from the ground at a cost of $50 per 40-gallon barrel.
   - Crude oil is transported to a refinery at a cost of 18 cents per gallon.
   - It takes 1.25 gallons of crude oil to produce 1 gallon of gasoline.
   - Crude oil is refined into gasoline at a cost of 10 cents per gallon of gasoline.
   - Gasoline is transported to gas stations at a cost of 14 cents per gallon.
   - Gas station owners add 15 cents to the cost of each gallon sold.
8. **Consumer Economics** A 5-pound bag of potatoes can be purchased for $2.49. At the same time, a 24-ounce bag of frozen french fries is priced at $2.99. Explain why the frozen potatoes are more expensive. What impact does this difference have on the measurement of GDP?

11.2 Limitations of GDP Estimation

Objectives

- Identify what types of production GDP calculations neglect.
- Determine why and how to adjust GDP for changes over time in the general price level.

Overview

Imagine the difficulty of developing an accounting system that must describe such a complex and dynamic economy. In the interest of clarity and simplicity, certain features are neglected. Features that are easier to measure and to explain may get too much attention. The problem is that the more comprehensive the national income accounts become, the more complicated they get. Trackers of the U.S. economy are always making tradeoffs between simplicity and comprehensiveness. Some production is not accounted for in GDP, however. GDP also must be adjusted for changes in the general price level over time.

Key Terms

depreciation

nominal GDP

real GDP

consumer price index (CPI)

In the News

The Yard Sale Police Are Coming

Given the current state of the economy, the underground economy—also called the informal economy, the shadow economy, or the black market—is flourishing. You may associate the underground economy with the drug trade, money laundering, and other such activities. However, this uncharted sector of the U.S. GDP is booming and spreading into all walks of life. It's found in the market for recycled aluminum cans, day labor, pawnshops, and unreported tips at restaurants. It's at farmer's markets, under-the-table work sites, used book and clothing stores, and—yes—even yard sales. U.S. governmental agencies largely have ignored the underground economy—until now, that is. The IRS and state tax departments currently are developing programs to keep track, and get their share, of tax money from the underground activities. The focus of these new programs is the dollar, the exchange medium of choice in the black market. The new identification markers in almost all new currency will allow tracking of the currency. It also will allow the government to pinpoint large amounts of unexplained cash placed in people's bank accounts or used for purchases. So be careful: The Yard Sale Police are recruiting and getting ready for a yard sale near you.

THINK ABOUT IT

Do you participate in the underground economy? If so, do you buy or sell in it? If not, do you think you will in the future? What it is about this activity that keeps it from being included in the GDP measurement?

Sources: *Daily Policy Digest* article, National Center for Policy Analysis, June 27, 2001; D. A. Barber, "The 'New' Economy?," *Tucson Weekly,* January 3, 2003.

What GDP Misses

With some minor exceptions, GDP includes only those products that are sold in legal markets. It thereby neglects all household production and all illegal production. GDP accounting also has difficulty capturing changes in the quality and variety of products, and in the amount of leisure time available.

Household Production

Do-it-yourself household production, such as childcare, meal preparation, house cleaning, and home repair, is not captured in GDP. Consequently, an economy in which each household is largely self-sufficient will have a lower GDP than will an otherwise similar economy in which people specialize and sell products to one another.

During the 1950s, more than 80 percent of American mothers with small children stayed at home, caring for the family. All this care did not add one cent to GDP, however. Today more than half of all mothers with small children are in the workforce. Their market labor is counted in U.S. GDP. What's more, GDP also has increased because meals, childcare, and the like are now more apt to be purchased in markets than provided by households. In less-developed economies, more economic activity is do-it-yourself or provided by the extended family.

Because official GDP figures ignore most home production, these figures understate actual production in economies where families do more for themselves and buy less in the market.

Underground Economy

GDP also ignores production in the *underground economy,* which includes activity that goes unreported either because it's illegal or because those involved want to evade taxes on otherwise legal activity. The underground economy also is called the black market or "working off the books." An example is a restaurant waiter who fails to report tip income in order to evade paying taxes on that income. A federal study suggests production in the underground economy is the equivalent of 7.5 percent of GDP. This amounted to about $1 trillion in 2006.

Leisure, Quality, and Variety

GDP indicates the value of goods and services produced in the economy. This gives economists some idea of the economy's *standard of living,* or its level of economic prosperity. However, GDP fails to capture some features of the economy that also play a part in living standards. For example, more leisure time contributes to a higher standard of living, but GDP offers no information



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Is the value of the activity of the woman in this photograph captured in GDP? Explain your answer.

about the amount of leisure time available in an economy. If the amount of leisure remained relatively constant over time, then ignoring leisure would not change the picture.

However, the average U.S. workweek is much shorter now than it was a century ago. This means people work less to produce today's output. People also retire at an earlier age, and they live longer after retirement. Thus, over the years, there has been an increase in the amount of leisure time available. Yet, leisure is not reflected in GDP because leisure is not explicitly bought and sold in a market.

The quality and variety of products available also have improved over the years because of technological advances and market competition. Recording systems, computers, tires, running shoes, cell phones, and thousands of other products have been improved. Also, new products are introduced all the time, such as high-definition television, the Internet, MP3 players, and wireless Internet connectors. Yet most of these improvements and innovations are not captured in GDP.

The gross domestic product fails to capture changes in leisure time. GDP also often fails to reflect changes in the quality of existing products and the availability of new ones. These factors make GDP a less-reliable measure of an economy's standard of living.

Depreciation

In the course of producing GDP, some capital wears out, such as the delivery truck that finally dies. A new truck that logs 100,000 miles its first year has been subject to wear and tear. It is now less valuable as a productive resource. Other capital becomes obsolete, such as an aging computer that can't run the latest software.

depreciation
The value of the capital stock that is used up or becomes obsolete in producing GDP during the year

Depreciation measures the value of the capital stock that is used up or becomes obsolete in the production process. Gross domestic product is called "gross" because it does not take into account this depreciation. A clearer picture of the *net* production that actually occurs during a year is found by subtracting this depreciation from GDP. *Net domestic product* equals gross domestic product minus depreciation, the value of the capital stock used up in the production process. By failing to account for depreciation, GDP overstates what's actually produced.

Economists distinguish between two definitions of investment. *Gross investment* measures the value of all investment during a year. Gross investment is used in computing GDP. *Net investment* equals gross investment minus depreciation. The economy's production possibilities depend on what happens to net investment. If net investment is negative—that is, if depreciation exceeds gross investment—the capital stock declines, so its contribution to output will decline as well. If net investment is zero, the capital stock remains constant, as does its contribution to output. If net investment is positive, the capital stock grows, as does its contribution to output. As the names indicate, *gross* domestic product reflects gross investment and *net* domestic product reflects net investment.

GDP Does Not Reflect All Costs

Some production and consumption degrades the quality of the environment. Trucks and cars pump carbon monoxide into the atmosphere. Housing developments gobble up forests and open space. Paper mills foul lungs and burn eyes. These negative externalities—costs that fall mostly on those not directly involved in the market transactions—are largely ignored in GDP accounting, even though they diminish the quality of life and may limit future production. To the extent that growth in GDP also involves growth in such negative externalities, a rising GDP may not be as attractive as it would first appear.

Net national product captures the depreciation of buildings, machinery, vehicles, and other manufactured capital. Both GDP and net national product ignore the depletion of natural resources, such as standing timber, fish stocks, and soil fertility. The federal government is now in the process of developing so-called *green accounting*, or green GDP, to reflect the impact of production on

air pollution, water pollution, lost trees, soil depletion, and the loss of other natural resources.

Despite the limitations and potential distortions associated with official GDP estimates, the trend of GDP over time provides a fairly accurate picture of the overall performance of the U.S. economy. Inflation, however, distorts comparisons of dollar amounts from one year to the next. That problem is discussed next.

✓CHECKPOINT

What types of production does the calculation of GDP neglect?

Adjusting GDP for Price Changes

The national income accounts are based on the market values of final goods and services produced in a particular year. Gross domestic product measures the value of output in *current dollars*—that is, in the dollar values at the time the output is produced. The system of national income accounting based on current dollars allows for comparisons among income or expenditure components in a particular year. For example, you could say that consumption last year was about four times greater than investment. Because the economy's general price level changes over time, however, current-dollar comparisons across years can be misleading.

Nominal GDP versus Real GDP

When GDP is based on current dollars, the national income accounts measure the *nominal value* of national output. Thus, the current-dollar GDP, or **nominal GDP**, is based on the prices when the output is produced. Because of inflation, however, focusing on the nominal value of GDP over time distorts the true picture. For example, between 1979 and 1980, nominal GDP increased by about 9 percent. That sounds impressive, but the economy's general price level rose more than 9 percent. So the growth in nominal GDP resulted entirely from inflation. **Real GDP**, or GDP adjusted for inflation, in fact declined. Recall that *inflation* is an increase in the economy's average price level.

If nominal GDP increases in a given year, part of this increase may simply result from inflation—pure hot air. To make meaningful comparisons of GDP across years, you must take out the hot air, or *deflate* nominal GDP. To focus on *real* changes in production, you must eliminate changes due solely to inflation.

NET Bookmark

The Bureau of Labor Statistics (BLS) web site features an "Inflation Calculator." You can access this tool through thomsonedu.com/school/econxtra. The inflation calculator lets you adjust for inflation the price of a good in one year to its price in another year. Use this tool to find the current year's prices for the following goods: (1) Bicycle purchased in 1992 for $250. (2) Candy bar purchased in 1980 for $.50. (3) College tuition of $3,000 per year in 1974.

thomsonedu.com/school/econxtra

TeamWork

Choose a partner. Each partner should list five goods and the cost of each good today. Next to each item, write a year as early as 1913. Your partner, using the BLS inflation calculator, will determine the price of each good on your list in the year you have indicated.

nominal GDP
The economy's aggregate output based on prices at the time of the transaction; current-dollar GDP

real GDP
The economy's aggregate output measured in dollars of constant purchasing power; GDP measured in terms of the goods and services produced

e-conomics

COMPUTER PRICES AND GDP ESTIMATION

Computer prices have fallen by an average of about 13 percent per year since 1982. Based on this rate of decline, a computer that cost, say $10,000 in 1982 cost about $5,000 in 1987, and only $325 in 2006. According to these prices, that computer cost about the same in 1982 as a minivan. In 2006, you could buy about 70 computers for the cost of a minivan. So computers became much less expensive between 1982 and 2006. The sharp decline in computer prices spurred purchases of computers for offices and homes. Suppose the number of computers purchased jumped from 1 million in 1982 to 5 million in 2006. If computers are valued at their 1982 price of $10,000, computer spending would have increased five times, from $10 billion in 1982 to $50 billion in 2006. If priced in current, or nominal, dollars of $10,000 in 1982 and $325 in 2006, spending on computers would have declined 84 percent from $10 billion in 1982 to only $1.62 billion in 2006. Economists who estimate GDP try to take into account the impact of falling computer prices on national output.

THINK CRITICALLY

How would you explain the sharp decline in computer prices from 1982 to 2006?

Source: Gary McWilliams, "Dell Fine-Tunes Its PC Pricing to Gain an Edge in Slow Market," *Wall Street Journal,* June 8, 2001.

Price Indexes

To compare the price level over time, you need a point of reference, a base year to which prices in other years can be compared. An *index number* compares the value of a variable in a particular year to its value in a base year, or reference year. Suppose bread is the only good produced in the economy. As a reference point, consider the price in some specific year. The year selected is called the base year. Prices in other years are expressed relative to the base-year price.

Suppose the base year is 2006, when a loaf of bread sold for $1.25. The price of bread increased to $1.30 in 2007 and to $1.40 in 2008. To construct a *price index*, each year's price is divided by the price in the base year and then multiplied by 100, as shown in Figure 11.3. For 2006, the base year, the base price of bread is divided by itself, $1.25/$1.25, which equals 1. So the price index in

Example of a Price Index (Base Year = 2006) — **Figure 11.3**

The price index equals the price in the current year divided by the price in the base year, all multiplied by 100. Here the base year is 2006.

Year	(1) Price of Bread in Current Year	(2) Price of Bread in Base Year of 2006	(3) Price Index (3) = (1)/(2) × 100
2006	$1.25	$1.25	100
2007	$1.30	$1.25	104
2008	$1.40	$1.25	112

2006 equals 1 × 100 = 100. *The price index in the base year, or base period, is always 100.*

The price index in 2007 is \$1.30/\$1.25, which equals 1.04, which multiplied by 100 equals 104. In 2008, the index is \$1.40/\$1.25, or 1.12, which multiplied by 100 equals 112. Thus, when compared to the base year, the price index is 4 percent higher in 2007 and is 12 percent higher in 2008.

The price index permits comparisons between any two years. For example, what if you were presented with the indexes for 2007 and 2008 and were asked what happened to the price level between the two years? By dividing the 2008 price index by the 2007 price index, or 112/104, you find that the price level rose by 7.7 percent.

Consumer Price Index

The **consumer price index (CPI)**, measures changes over time in the cost of buying a "market basket" of goods and services purchased by a typical family. For simplicity, suppose that market basket for the year includes 365 pounds of bananas, 500 gallons of fuel oil, and 12 months of cable TV. Prices in the base year are listed in column (2) of Figure 11.4. Multiplying price by quantity yields the total cost of each product in the base year, as shown in column (3). The cost of the market basket in the base year is \$1,184.85, shown as the sum of column (3).

Prices in the current year are listed in column (4). Note that not all prices changed by the same percentage since the base year. The price of fuel oil increased by 50 percent, but the price of bananas fell. The cost of purchasing that same basket in the current year is \$1,398.35, shown as the total of column (5).

To compute the consumer price index for the current year, you simply divide the total cost in the current year by the total cost of that same basket in the base year, or \$1,398.35/\$1,184.85, and then multiply by 100. This yields a price index of 118. You could say that between the base year and the current year, the "cost of living" increased by 18 percent, although not all prices changed by the same percentage.

The federal government uses the years 1982 to 1984 as the base period for calculating the CPI for a market basket of about 80,000 items in more than 200 categories of goods and services. The CPI is reported monthly, based on prices from thousands of sellers across the country.

consumer price index (CPI)

Measure of inflation based on the cost of a fixed "market basket" of goods and services purchased by a typical family

GDP Price Index

Price indexes are weighted sums of various prices. Whereas the CPI focuses on just a basket of consumer purchases, a more comprehensive price index, the

Example Market Basket Used to Develop the Consumer Price Index — **Figure 11.4**

Good or Service	(1) Quantity in Market Basket	(2) Prices in Base Year	(3) Cost of Basket in Base Year (3) = (1) × (2)	(4) Prices in Current Year	(5) Cost of Basket in Current Year (5) = (1) × (4)
Bananas	365 pounds	\$ 0.89/pound	\$324.85	\$ 0.79	\$ 288.35
Fuel Oil	500 gallons	\$ 1.00/gallon	\$500.00	\$ 1.50	\$ 750.00
Cable TV	12 months	\$30.00/month	\$360.00	\$30.00	\$ 360.00
			\$1,184.85		\$1,398.35

The cost of a market basket in the current year, shown at the bottom of column (5), sums the quantities of each item in the basket, shown in column (1), times the price of each item in the current year, shown in column (4).

GDP price index, includes all goods and services produced. The GDP price index is found by dividing the nominal GDP by the real GDP and then multiplying by 100:

$$\text{GDP price index} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

Nominal GDP is the dollar value of this year's GDP measured in current-year prices. Real GDP is the dollar value of this year's GDP measured in base-year prices. If you know both nominal GDP and real GDP, then finding the GDP price index is easy. The federal government most recently has used 2000 as the base year for computing real GDP. The base year moves forward every few years and could be a later year by the time you read this.

✓ CHECKPOINT

Why and how is GDP adjusted for changes in the general price level?

Assessment 11.2

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Key Concepts

1. Why wouldn't our nation's GDP grow if you mow your own lawn, but would grow if you were paid to mow your neighbor's lawn?
2. How do many young people participate in the underground economy?
3. Why wouldn't the purchase of a $20,000 truck by a business necessarily represent a $20,000 net investment in the economy?

Graphing Exercise

4. Americans watch television for more hours than people in any other nation. Although they value their time in front of the "tube," this value is not included in GDP. Construct a bar graph showing the hours the average American spends watching TV from the data in the table. Is there a way the value of this time should or could be included in national income accounting? Explain your point of view.

Average Hours Spent Watching Television Programming Per Year, 2000–2008

Year	Average Viewing Hours
2000	1,635
2002	1,705
2004	1,792
2006	1,858
2008	1,931

(Values for 2004, 2006, and 2008 are projected.)

Think Critically

5. **Government** In 1990, the federal government spent $1,253.2 billion when the CPI was 130.7. Ten years later, in 2000, the federal government spent $1,788.8 billion when the CPI was 172.2. Did the federal government's real spending increase in these years? Explain your answer.

11.3 Business Cycles

Objectives

- Distinguish between the two phases of the business cycle, and compare the average length of each.
- Differentiate among leading, coincident, and lagging economic indicators.

Overview

Economic activity, like cycles in nature, fluctuates in a fairly regular way. The U.S. economy and other industrial market economies historically have experienced alternating periods of expansion and contraction in the level of economic activity. These fluctuations vary in length and intensity, yet some features appear common to all. The ups and downs usually involve the entire nation and often the world. They affect nearly all dimensions of economic activity, not simply employment and production. Despite these ups and downs, the U.S. economy has grown dramatically over the long run.

Key Terms

business cycle

recession

expansion

leading economic indicators

In the News

Tracking a $12 Trillion Economy

How does the government keep track of the most complex economy in history? Ever since Article I of the U.S. Constitution required that a census be taken every 10 years, the federal government has been gathering data. The three main data-gathering agencies are the Census Bureau, the Bureau of Economic Analysis, and the Bureau of Labor Statistics. Since 1980, the market value of all final goods and services produced in the United States has more than doubled. Employment has increased by more than 40 million workers. Foreign trade has tripled. Yet the federal budget for these agencies has declined. Only 0.2 percent of the federal budget goes toward keeping track of the economy. Federal budget cuts have eliminated some data-collection efforts and have slowed down others. Some agencies must do more with the same staff. In 1980, the Bureau of Labor Statistics had 18 analysts to keep track of productivity in 95 different industries. The number of industries they now track has increased fourfold. However, the number of analysts has changed little.

THINK ABOUT IT

Do you think it is important for the U.S. government to keep track of the size of the economy? Why or why not?

Sources: "The U.S. Statistical System and a Rapidly Changing Economy," *Brookings Policy Brief,* no. 63, July 2000, pp. 2–8; Leonard Nakamura, "Is the U.S. Economy Really Growing Too Slowly? Maybe We're Measuring Growth Wrong," *Federal Reserve Bank of Philadelphia Business Review*, March–April 1997, pp. 1–12.

U.S. Economic Fluctuations

business cycle
Fluctuations reflecting the rise and fall of economic activity relative to the long-term growth trend of the economy

The **business cycle** reflects the rise and fall of economic activity relative to the long-term growth trend of the economy. Perhaps the easiest way to understand the business cycle is to examine its components. During the 1920s and 1930s, Wesley C. Mitchell, director of the National Bureau of Economic Research (NBER), noted that the economy experiences two phases: periods of expansion and periods of contraction.

Recessions and Expansions

A contraction might be so severe as to be called a *depression*. This is a sharp reduction in the nation's total production lasting more than a year and accompanied by high unemployment. A milder contraction is called a **recession**, which is a decline in total production lasting at least two consecutive quarters, or at least six months. The U.S. economy experienced both recessions and depressions before World War II. Since then, there have been many recessions but no depressions.

recession
A decline in total production lasting at least two consecutive quarters, or at least six months

expansion
The phase of economic activity during which the economy's total output increases

Long-Term Growth

Despite these ups and downs, the U.S. economy has grown dramatically over the long run. The economy in 2005 was nearly 13 times larger than it was in 1929, as measured by real gross domestic product, or real GDP. With real GDP, the effects of changes in the economy's price level have been stripped away. Therefore, the remaining changes reflect real changes in the value of goods and services produced.

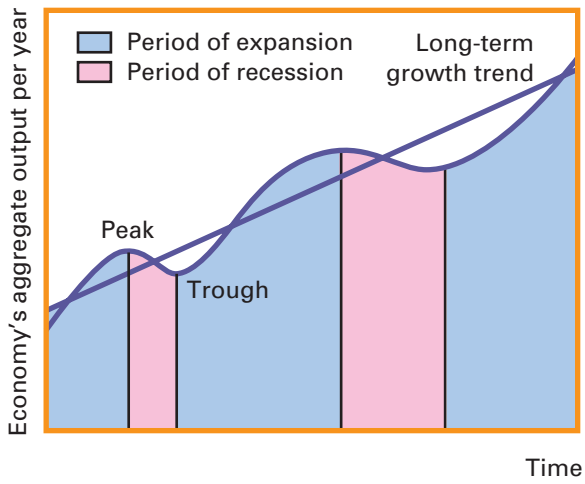
Production tends to increase over the long run because of

1. increases in the amount and quality of resources, especially labor and capital.
2. better technology.
3. improvements in the *rules of the game* that facilitate production and exchange, such as property rights, patent laws, legal systems, and customs of the market.

Figure 11.5 shows a long-term growth trend in real GDP as an upward-sloping straight line. Economic fluctuations reflect movements around this growth trend. A recession begins after the previous expansion has reached its *peak,* or high point, and then heads down until the economy reaches a *trough,* or low point. The period between a peak and trough is a recession. The period between a trough and subsequent peak is an **expansion**, or the phase of economic activity during which the economy's total output increases. Note that expan-

Business Cycles — **Figure 11.5**

Business cycles reflect movements of economic activity around a trend line that shows long-term growth. A recession (shown in pink) begins after a previous expansion (shown in blue) has reached its peak and continues until the economy reaches a trough. An expansion begins when economic activity starts to increase and continues until the economy reaches a peak. A complete business cycle includes both the recession phase and the expansion phase.



sions last longer than recessions, but the length of the full cycle varies.

History of U.S. Business Cycles

Economists at the NBER have been able to track the U.S. economy back to 1854. Between 1854 and 2006, the nation experienced 32 business cycles. No two have been exactly alike. The longest expansion began in the spring of 1991 and lasted ten years. The longest contraction lasted five and a half years, from 1873 to 1879.

Output changes since 1929 appear in Figure 11.6. The figure shows the annual percentage change in real GDP, with declines in red and increases in green. The big decline during the Great Depression of the early 1930s and the sharp jump during World War II stand in stark contrast. Growth since 1929 has averaged 3.4 percent a year. Since the end of World War II in 1945, expansions have averaged just under five years and recessions just under one year. Thus, expansions have averaged five times longer than recessions.

NET Bookmark

The National Bureau of Economic Research maintains a web page devoted to business cycle expansions and contractions. Take a look at this page and see if you can determine how the business cycle has been changing in recent decades. Has the overall length of cycles been changing? Have recessions been getting longer or shorter?

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Different Impact on States

The intensity of the business cycle varies from region to region across the United States. A recession hits hardest those regions that produce durable goods, such as appliances, furniture, and automobiles. This is because the demand for these goods falls more during hard times than does the demand for other goods and services.

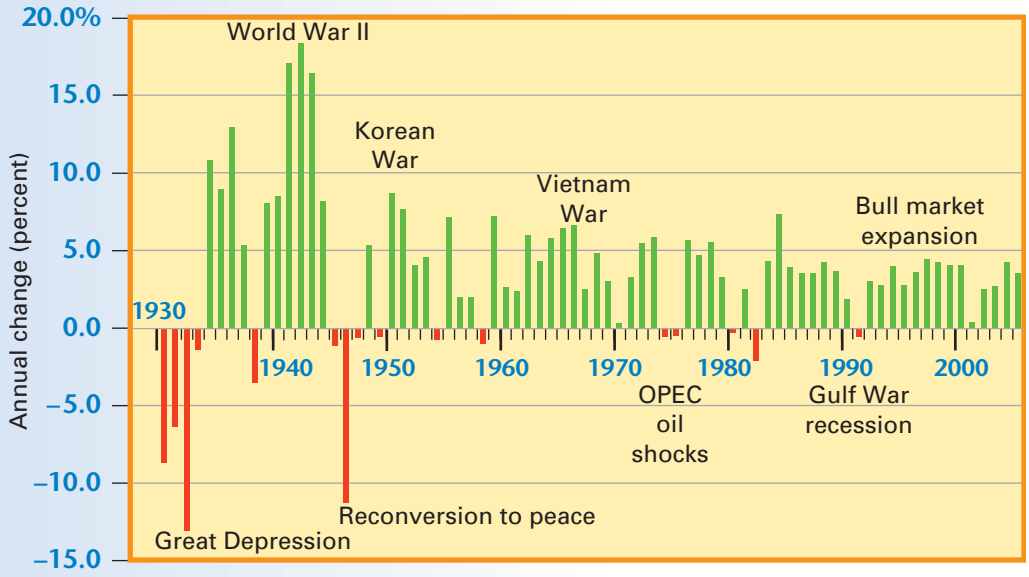
Because of seasonal fluctuations and random events, the economy does not move smoothly through phases of

Ask the Xpert!

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Gross domestic product increased between 1973 and 1974, but they say we had a recession. How could this be?

Annual Percentage Change in U.S. Real GDP Since 1929 — **Figure 11.6**



Since the end of World War II in 1945, the economy has gone through 10 business cycles. Expansions averaged just under five years. Recessions averaged just under one year. Note: In this chart, declines are shown in red and increases, in green.

Source: Based on annual estimates from the U.S. Department of Commerce.



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Is the job security of a construction worker who helps to build new homes likely to be affected by a recession? Why or why not?

business cycle. At the time of their occurrence, economists cannot always distinguish between temporary setbacks in economic activity and the beginning of a downturn. The drop in production in a particular quarter may result from a big snowstorm or a poor harvest rather than mark the onset of a recession. Turning points—peaks and troughs—are thus identified by the NBER only after the fact. Because recession means that output declines for at least two consecutive quarters, a recession is not so designated until at least six months after it begins.

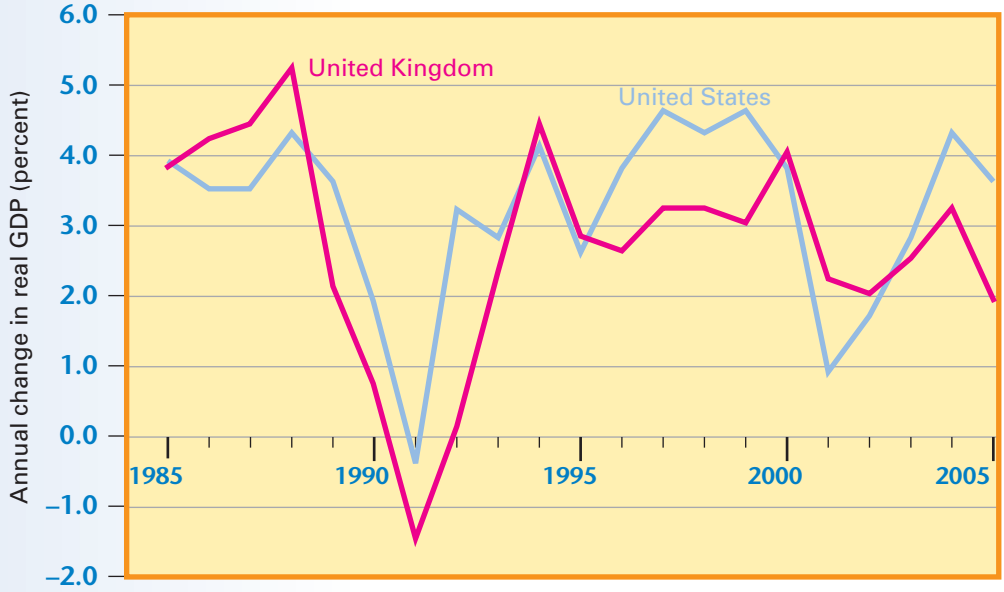
Business Cycles Around the Globe

Business cycles usually involve the entire nation. Indeed, market economies around the world often move together. Though economic fluctuations do not also happen at the same time across countries, a link often is apparent. Consider the experience during the last two decades of two leading economies—the United States and the United Kingdom (which consists of England, Scotland, Wales, and Northern Ireland). Figure 11.7 shows for both economies the year-to-year percentage change since 1985 in

U.S. and U.K. Growth Rates in Real GDP — **Figure 11.7**

Growth rates of output in the United States and the United Kingdom are similar.

Sources: OECD *Economic Outlook* and *Economic Report of the President,* February 2006, Tables B-2 and B-112.



their real GDPs. Again, *real* means that the effects of inflation have been erased. Remaining changes reflect *real* changes in the total amount of goods and services produced.

If you follow the annual changes in each economy, you will notice the similarities. For example, in 1991, U.S. real GDP declined, or had a negative growth rate, reflecting a recession. The United Kingdom also experienced a recession that year. Likewise, in both economies, growth in 1994 jumped to at least 4 percent, and then slowed the following year.

One problem with the linkage across economies is that a slump in other major economies could worsen a recession in the United States, and vice versa. For example, the terrorist attacks on the United States in September 2001 rocked economies and stock markets around the world.

Although year-to-year fluctuations in output are of interest, even more important to an economy's standard of living is its long-term growth trend. U.S. real GDP growth averaged 3.1 percent per year between 1985 and 2005, compared with 2.7 percent in the United Kingdom. This seemingly small difference compounded over the years to raise the level of real GDP much more in the United States. For example, if U.S. GDP had averaged only 2.7 percent growth since 1985, output by 2005 would have been $800 billion below that achieved with its 3.1 percent growth. The lower growth rate would have reduced U.S. production and income in 2005 by about $2,700 per person, or $10,800 for a family of four.

✓ CHECKPOINT

What are the two phases of the business cycle, and what has been the average length of each since World War II?

Economic Indicators

During the Great Depression, economists identified measures that would keep better track of the economy. These economic indicators are classified according to their timing relative to the ups and downs of the business cycle. Those that predict future changes are called *leading indicators.* Those that measure the ups and downs as they occur are called *coincident indicators.* Those that measure the ups and downs after they have already occurred are called *lagging indicators.*

To understand economic indicators better, consider weather indicators as an example. A leading indicator tells you what the weather will be like tomorrow. A coincident indicator tells you what it's like outside right now. A lagging indicator tells you what the weather was yesterday. Leading economic indicators get the most attention because people want to know where the economy is headed.

Leading Indicators

Certain events foretell a turning point in the economy. Months before a recession begins, changes in leading economic indicators point to the coming storm. In the early stages of a recession, business slows, orders for machinery and computers slip, and the stock market, anticipating lower profits, turns down. Consumer confidence in the economy's future also begins to sag. Households cut back on their spending, especially for big-ticket items like new cars and new homes.

All these activities are called **leading economic indicators** because they usually predict, or *lead to,* a downturn. There are 10 leading indicators rolled into the *index of leading indicators* and reported monthly. Upturns in leading indicators point to an economic recovery. The index of leading indicators is a closely followed measure of economic activity.

leading economic indicators
Measures that usually predict, or *lead to,* recessions or expansions

Leading indicators cannot predict precisely *when* a turning point will occur, or even *whether* one will occur. Sometimes the leading indicators sound a false alarm. Leading indicators also may not work when there is an external shock to the economy, such as a

terrorist attack, drought, earthquake, or hurricane. For example, when Iraq invaded Kuwait in 1990, the price of crude oil increased 60 percent. This caused an economic downturn throughout the world that could not have been predicted by the leading indicators.

Coincident Indicators

Some economic indicators measure what's going on in the economy right now. *Coincident economic indicators* are those measures that reflect peaks and troughs as they happen. There are four coincident indicators combined into the *index of coincident indicators,* including total employment, personal income, and industrial production.

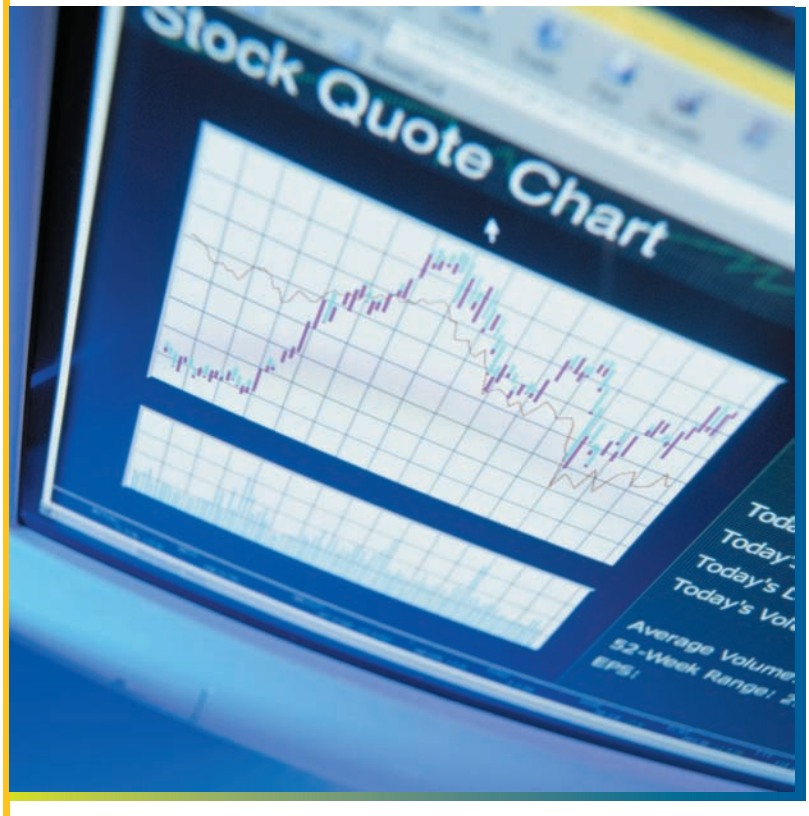
Lagging Indicators

Some economic indicators measure what has already happened. *Lagging economic indicators* follow, or trail, changes in overall economic activity. There are seven economic measures combined into *the index of lagging indicators,* including the interest rate, measures of loans outstanding, and the average duration of unemployment.

This introduction to the business cycle has been largely mechanical, focusing on the history and measurement of these fluctuations. Why economies fluctuate has not been addressed, in part because such a discussion requires a fuller understanding of the economy and in part because the causes are not always clear. The next section begins to build a framework by introducing a key model of the national economy.

Investigate Your Local ECONOMY

Before new houses may be constructed, contractors must obtain building permits from local government. Find out the number of building permits issued in your community during the most recent two months of available data. Compare these figures with the same months the year before. In light of this information, what will probably happen to the local economy in the next few months?



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What type of economic indicator is provided in a chart that tracks the daily activity of a particular stock?

✓ CHECKPOINT

What are the differences among leading, coincident, and lagging economic indicators?

Assessment 11.3

Key Concepts

1. Decide whether the U.S. economy is currently in an expansion or a recession. Identify and explain the types of information that allow you to make this decision.
2. Do you think a recession would harm your community more or less than the average of all communities in the United States? Explain your answer.
3. How would a major expansion of the economies in Europe affect the U.S. economy?
4. If the real GDP increased from $13 trillion last year to $14 trillion this year, would you think that the economy is in a recession or an expansion? Explain your answer.

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Graphing Exercise

5. Use data in the table to construct a bar graph that shows the rate of growth in real GDP from 1996 through 2005. If the long-range growth rate average 3.0 percent per year, which years exceeded this growth rate and which had lower rates of growth? How does your graph demonstrate the business cycle?

Real GDP Growth Rates, 1996–2005

Year	Real GDP Growth	Year	Real GDP Growth
1996	3.7%	2001	0.8%
1997	4.5%	2002	1.6%
1998	4.2%	2003	2.5%
1999	4.5%	2004	3.9%
2000	3.7%	2005	3.2%

Source: *Economic Indicators*, May 2006, p. 2.

Think Critically

6. **History** During the early years of the Great Depression of the 1930s, average prices fell in the United States. If the average price level in a particular year fell by 10 percent, by how much would nominal GDP have to decline for real GDP to decline?
7. **Management** Explain why the managers of a home construction business would be more concerned with the business cycle than would the owners of a dairy.

movers & shakers

Denise Austin *Fitness Expert*

Some people become millionaires just doing what they love to do most. Denise Austin is one such person.

As a typical 12 year-old growing up in San Pedro, California, Denise enrolled in gymnastics classes. It was a wise choice. She was very good at gymnastics. So good, in fact, that she was offered an athletic scholarship to the University of Arizona. In 1979 she graduated from California State University, Long Beach, with a Bachelor of Arts degree in Physical Education, with emphasis on Exercise Physiology.

After graduation, Denise began teaching aerobic exercise classes in the Los Angeles area. The benefits of sustained aerobic exercise for the heart and for overall health had become widely known. Her classes were a hit with people looking for regularly scheduled exercise. And her upbeat, enthusiastic teaching method made her classes especially popular. Word spread, and after two years of doing what she loved, she was offered a chance to widen her audience by teaching aerobics on her own television show.



AP PHOTO/MANUEL BAL CENETA

At the same time Denise started a company, A Body, which designed fitness programs for a wide range of clients. "Nobody was talking about corporate fitness at the time," she told radio host Larry King. "So what I did was go into the clubs and requisition a racquetball court, or into a company and commandeer the cafeteria. I'd bring in teachers to conduct classes." Eventually she kept 30 instructors busy working at 16 sites. As the fitness craze grew, companies and clubs began offering classes of their own, and Denise closed her business.

The end of that business did not, however, signal the end of Denise Austin's popularity. She has since produced and appeared in more than 50 exercise videos and DVDs including Ultimate Fat Burner, the Get Fit Fast video series, Power Yoga Plus, and Pilates for Everybody. She hosts two fitness shows for Lifetime Television: Denise Austin's Daily Workout and Fit & Lite. She has authored numerous books on fitness and nutrition and is a columnist for *Prevention* magazine.

In 2002 President George W. Bush appointed Denise to the President's Council on Physical Fitness and Sports. She held this position for several years, promoting the benefits of fitness and inspiring others to live more active lives. In 2005 she helped launch a revised food pyramid developed by the U.S. Department of Agriculture.

Many believe Denise's success can be attributed to her positive attitude and determination. "My primary, driving goal is simply to help the average American look and feel a little bit better, happier, and healthier."

SOURCE READING

Denise Austin's company, A Body, was successful as the fitness craze took hold in the United States. Why did that business eventually fail? Why have her other business ventures (television shows, videos, books) continued to be successful?

ENTREPRENEURS IN ACTION

Imagine you are a high school student with a special interest in cooking. Upon high school graduation, what might you do to broaden your cooking skills? Think of three business ideas related to cooking that might make you a successful businessperson someday.

Sources: www.fitness.gov/bio_austin.htm; www.deniseaustin.com; http://transcripts.cnn.com/transcripts/0004/15/lklw.00.html.

11.4 Aggregate Demand and Aggregate Supply

Objectives

- Explain what is meant by aggregate output and the economy's price level.
- Describe the aggregate demand curve and the aggregate supply curve, and show how they determine the equilibrium level of price and aggregate output.

Overview

In the study of market economics, the focus is on a particular market, such as the market for pizza. However, the national economy is so complex that you need to simplify in order to focus on the big picture. The perspective broadens from the market for pizza, computers, or cell phones to the market for everything produced in the economy. Aggregate demand and supply curves help you understand how the price and output for the economy as a whole are determined. Like other theoretical models, these can be used to predict what will happen as a result of economic policies and events.

Key Terms

aggregate output

aggregate demand

price level

aggregate demand curve

aggregate supply curve

In the News

Measuring the "Knowledge Economy"

In today's "knowledge economy" some economists argue that the present way of measuring its size is inadequate. They argue that the "intangibles" many companies invest in—such as building brand awareness, employee training, or research and development—should be included in the measure of investment in order to illustrate the true strength of the nation's economy. Currently such outlays are counted as a cost of current production that presumably gets reflected in the sale of the final goods and services. According to the current approach, adding such outlays to GDP separately would involve double counting. But if counted as part of investment, such intangible expenditures would increase the estimate of GDP. Building a factory, buying property, or purchasing a computer clearly are investments that yield future income, but intangible investments are harder to quantify. How much is an advertising campaign worth in selling a product in the future? How much is spending on advertising investment in brand recognition? Is company funding of employee education an investment? If economists decide to include such expenditures as part of investment, this would raise the estimate of U.S. GDP substantially. If such intangibles were included, America's GDP for the 1950s would be 5 percent higher. For recent years, the increase would be even larger at 12 percent.

THINK ABOUT IT

Keeping in mind the difficulties in counting intangible investments, do you think there is a value in counting them in the nation's GDP?

Source: "Getting a Grip on Prosperity," *The Economist*, March 2, 2006.

Aggregate Output and the Price Level

Picture a pizza. Now picture food more generally. Food includes not just pizza but thousands of edibles, from apricots to zucchini. Although food is more general than pizza, you probably have no difficulty picturing food. Now make the leap from food to all goods and services produced in the economy—food, housing, clothing, entertainment, education, transportation, medical care, and so on.

Aggregate Output

aggregate output
A composite measure of all final goods and services produced in an economy during a given period; real GDP

aggregate demand
The relationship between the average price of aggregate output and the quantity of aggregate output demanded, with other things constant

Aggregate output is the total amount of all final goods and services produced in the economy during a given period. The best measure of aggregate output is *real GDP*. Just as you can talk about the demand for pizza or the demand for food, you can talk about the demand for aggregate output. **Aggregate demand** is the relationship between the average price of aggregate output and the quantity of aggregate output demanded.

The Price Level

price level
A composite measure reflecting the prices of all goods and services in the economy relative to prices in a base year

The **price level** is a composite measure reflecting the prices of all goods and services in the economy relative to prices in a base year. You are more familiar than you may think with these aggregate measures. Headlines refer to changes in the growth of aggregate output—as in "Growth Slows in Second Quarter." News accounts also report on changes in the economy's price level—as in "Prices Up Slightly in June." You already have some idea how the economy's price level is computed. What you need to know now is that the price level in any year is an *index number,* or reference number. This compares average prices that year to average prices in some base, or reference, year. If you say that the price level is higher, you mean it's higher compared to where it was. The focus here is on the *price level* of all goods and services produced in the economy *relative to the price level in some base year.*

As discussed in the section about price indexes, the price level in the *base year* has a benchmark value of 100. Price levels in other years are expressed relative to the base-year price level. The price level, or price index, is used not only to compare price levels across time but also to make more accurate comparisons of aggregate output over time.

Real Gross Domestic Product

Economists use the GDP price index to eliminate any year-to-year changes in GDP due solely to changes in the economy's price level. After this adjustment is made, remaining changes reflect changes in real output, or changes in the amount of goods and services produced. After adjusting GDP for price changes, you end up with real GDP.

✓ CHECKPOINT

What is aggregate output, and what is the economy's price level?

Aggregate Demand and Aggregate Supply Curves

In Chapters 4 and 5, you learned about the demand and supply of a particular product. Now the focus turns to the demand and supply of the total measure of output—aggregate output, or real GDP.

The Aggregate Demand Curve

aggregate demand curve
A curve representing the relationship between the economy's price level and real GDP demanded per period, with other things constant

Just as you can talk about the demand for pizza or the demand for movie tickets, you can talk about the demand for aggregate output in the economy. The **aggregate demand curve** shows the relationship between the price level in the economy and real GDP demanded,

other things constant. Figure 11.8 shows a hypothetical aggregate demand curve, *AD*. The vertical axis measures an index of the economy's price level relative to a 2000 base-year price level of 100. The horizontal axis shows real GDP, which measures aggregate output in dollars of constant purchasing power (here, based on 2000 prices).

The aggregate demand curve in Figure 11.8 reflects an inverse relationship between the price level in the economy and real GDP demanded. Aggregate demand sums the demands of the four economic decision makers: households, firms, governments, and the rest of the world. As the price level increases, other things constant, households demand less housing and furniture, firms demand fewer trucks and tools, governments demand less computer software and military hardware, and the rest of the world demands less U.S. grain and U.S. aircraft.

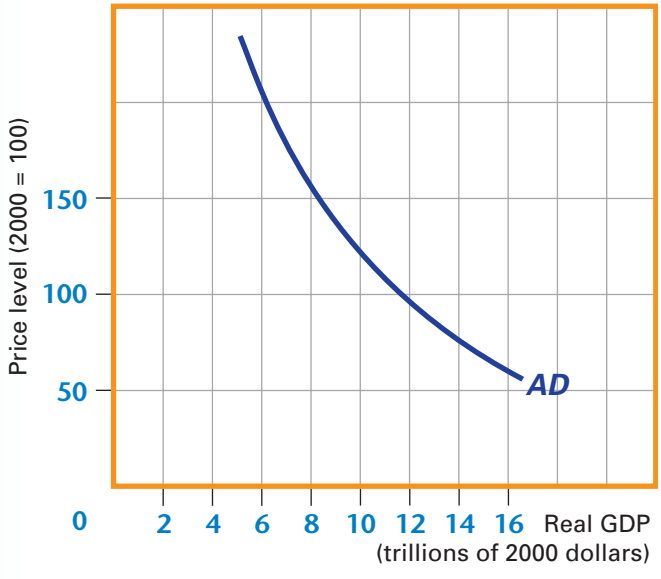
Here's a quick explanation of the inverse relationship between price level and real GDP demanded. Real GDP demanded depends in part on household wealth. Some wealth is typically held in bank accounts and in currency. An increase in the price level, other things constant, decreases the purchasing power of bank accounts and currency. Households, therefore, are poorer in real terms when the price level increases, so the quantity of real GDP demanded decreases. Conversely, a reduction in the price level increases the purchasing power of bank accounts and currency. *Because households are richer as the price level decreases, the quantity of real GDP demanded increases.*

Among the factors held constant along a given aggregate demand curve are price levels in other countries as well as exchange rates between the U.S. dollar and foreign currencies. When the U.S. price level increases, U.S. products become more expensive relative to foreign products. Consequently, households, firms, and governments both here and abroad decrease the quantity of U.S. real GDP demanded. On the other hand, a lower U.S. price level makes U.S. goods relatively cheap compared with foreign goods, so the quantity of U.S. real GDP demanded increases.

The Graphing Workshop

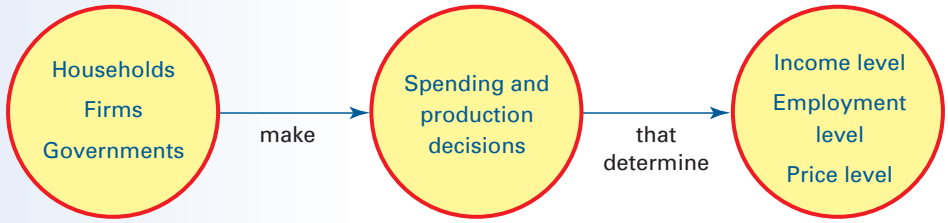
Aggregate Demand Curve **Figure 11.8**

The quantity of real GDP demanded is inversely related to the economy's price level, other things constant. This inverse relationship is reflected by the aggregate demand curve AD.



Main Idea

Macroeconomy—Income, Employment, Price Level



Households, firms, and governments make spending and production decisions that determine the economy's income level, employment level, and price level. This is the big idea with the macroeconomy.

The Aggregate Supply Curve

aggregate supply curve
A curve representing the relationship between the economy's price level and real GDP supplied per period, other things constant

The **aggregate supply curve** shows how much output U.S. producers are willing and able to supply at each price level, other things constant. How does the quantity supplied respond to changes in the price level? The upward-sloping aggregate supply curve *AS* in Figure 11.9 shows a positive relationship between the price level and the quantity of aggregate output that producers supply, other factors remaining constant.

Assumed constant along an aggregate supply curve are (1) resource prices, (2) the state of technology, and (3) the rules of the game that provide production incentives, such as patent and copyright laws. Wage rates are typically assumed to remain constant along the aggregate supply curve. With wages constant, firms find a higher price level more profitable, so they increase real GDP supplied. *Whenever the prices firms receive rise faster than the cost of production, firms find it profitable to expand output. Therefore, real GDP supplied varies directly with the economy's price level, other things constant.*

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Equilibrium

The intersection of the aggregate demand curve and aggregate supply curve determines the equilibrium price level and real GDP in the economy. Figure 11.9 is a rough depiction of aggregate demand and supply in 2005. Equilibrium real GDP in 2005 was about $11.1 trillion, measured in dollars of 2000 purchasing power. The equilibrium price level in 2005 was 112.2, compared with a price level of 100 in the base year of 2000. At any other price level, real GDP demanded would not match real GDP supplied.

Although employment is not measured directly along the horizontal axis, firms usually must hire more workers to produce more output. Greater levels of real GDP are beneficial because (1) more goods and services are available in the economy and (2) more people are employed.

Real GDP and Prices Since 1929

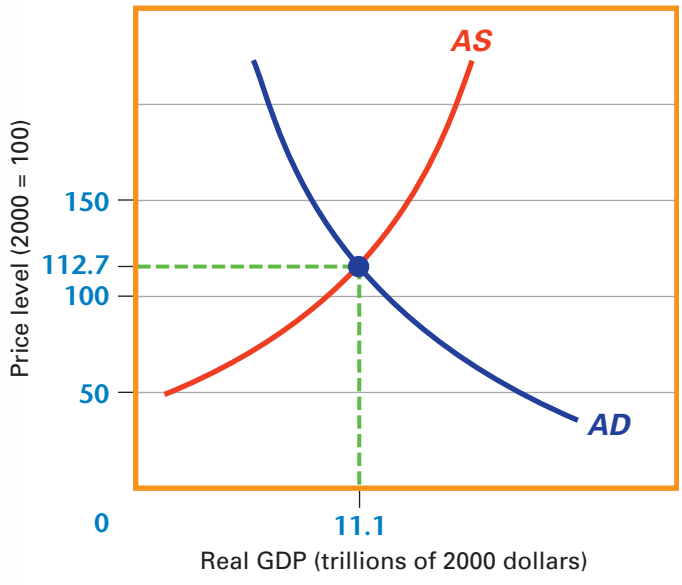
Figure 11.10 on page 342 traces the U.S. real GDP and price level since 1929. Aggregate demand and aggregate supply curves for 2005 are shown as an

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Aggregate Demand and Supply

Figure 11.9

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The economy's real GDP and price level are determined at the intersection of the aggregate demand and aggregate supply curves. The equilibrium point reflects real GDP and the price level for 2005, using 2000 as the base year for prices.

example, but all points in the series reflect such intersections. Real GDP, measured along the horizontal axis in 2000 constant dollars, grew from $0.9 trillion in 1929 to $11.1 trillion in 2005—nearly a thirteen-fold increase and an average annual growth rate of 3.4 percent. The price level also rose, but not as much, rising from only 12.0 in 1929 to 112.7 in 2005 a nine-fold increase and an average inflation rate of 3.0 percent per year.

Because the U.S. population is growing all the time, the economy must continue to create new jobs just to employ the additional people entering the work force. For example, the U.S. population grew from 122 million in 1929 to 296 million in 2005, a rise of 143 percent. Fortunately, employment grew even faster, from 48 million in 1929 to 143 million in 2005, for a growth of 198 percent. During the last seven decades, employment grew more than enough to keep up with a growing population. The United States has created more jobs than any other economy in the world.

Not only did the number of workers just about triple, but workers' average level of education increased as well. Employment of other resources, especially capital goods, also rose sharply. What's more, the level of technology improved steadily, thanks to major breakthroughs such as the computer chip and the Internet. The availability of more and higher-quality human capital and physical capital increased the productivity of each worker. This contributed to the near thirteen-fold jump in real GDP since 1929.

Real GDP is important, but the best measure of an economy's standard of living is *real GDP per capita*, which indicates how much an economy produces on average per resident. Because real

NETBookmark

Would you like to learn more about the economic history of the past century? J. Bradford De Long's brief article, "Slouching Toward Utopia," provides one economist's evaluation of key developments. Access this article through thomsonedu.com/school/econxtra. According to the article, what changes were history's driving force during the twentieth century?

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GDP grew much faster than the population since 1929, real GDP *per capita* jumped five-fold from about $7,100 in 1929 to about $37,500 in 2005. The United States is the largest economy in the world and has been a leader in real GDP per capita.

✓ CHECKPOINT

What are the aggregate demand and aggregate supply curves, and how do they determine the economy's equilibrium price level and aggregate output?

ETHICS IN ACTION

A New, Improved CPI

The Consumer Price Index (CPI) tends to overstate the true impact of inflation on the price level. The problem occurs in part because the CPI does not take into consideration that higher prices could result from improved quality rather than inflation. Another reason CPI tends to overstate inflation is that it does not recognize that the amounts consumers buy will change over time because some prices increase more than other prices. Researchers have concluded that the CPI overestimates inflation by about 1 percent per year. About 30 percent of all federal outlays are tied to changes in the CPI. The IRS uses the CPI to determine changes in tax brackets. Firms and unions determine changes in cost-of-living allowances based on the CPI. The government also bases Social Security benefits and welfare payments on changes in the CPI. The Bureau of Labor Statistics has introduced an experimental version of the CPI that would reduce measured inflation.

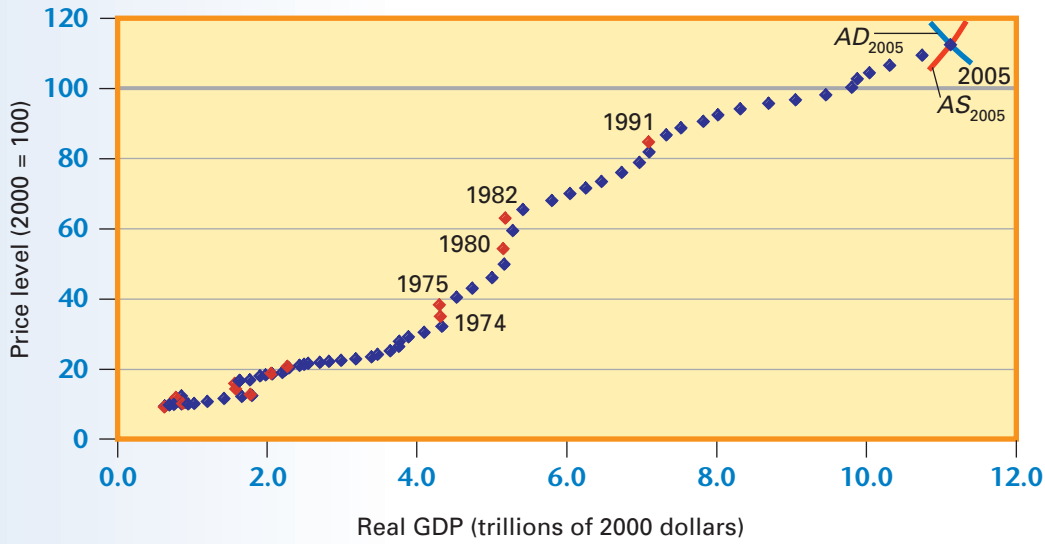
THINK CRITICALLY

Who would benefit and who would be hurt from a more accurate measurement of CPI? Should government use the more accurate measurement? Why or why not?

U.S. Real GDP and Price Level Since 1929 — **Figure 11.10**

Both real GDP and the price level increased since 1929. Blue points indicate years of growing real GDP, and red points are years of declining real GDP. Real GDP in 2005 was nearly 13 times greater than it was in 1929. The price level was more than 9 times greater.

Source: Based on annual estimates from the U.S. Department of Commerce.



Sharpen Your Skills



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Evaluate Data

The data in the table below can be used to draw conclusions about the average standard of living enjoyed by people in Mexico between 1997 and 2000. In evaluating data, you first identify the subject. Next, identify the types of data given. Then determine the quantities in which the data are recorded. Lastly, compare the values of the data.

In evaluating data,

1. Identify the subject.
2. Identify the types of data given.
3. Determine the quantities in which the data are recorded.
4. Compare the values of the data.

Apply Your Skill

1. What happened to the real GDP in Mexico during these years?
2. What impact has the growth in population had on the standard of living in Mexico?
3. Why would lower rates of inflation tend to cause most people in Mexico to have better standards of living?
4. Why do nations that have lower birth rates tend to have higher standards of living?

Data About Mexico, 1997–2000

Year	1997	1998	1999	2000
Nominal GDP (billions of U.S. dollars)	$401	$421	$480	$574
Population (millions of people)	97.6	98.6	99.5	100.4
Change in Prices	——	15.9%	16.6%	9.5%

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Key Concepts

1. Explain how your spending would be affected by a 10 percent average increase in prices. How would this change affect aggregate demand for goods and services throughout the economy?
2. How is it possible for aggregate output to fall at the same time that nominal GDP increases by 2 percent?
3. What effect would an increase in the cost of productive resources have on the aggregate supply curve and on the equilibrium prices of products?
4. What would you need to know to be able to determine whether real GDP per capita increased from last year?

Graphing Exercise

5. Use the data in the table to construct a bar graph that shows the change in real GDP per capita in the years from 2000 through 2004. By how many dollars did per capita income increase per year on average between 2000 and 2004?

Think Critically

6. **History** Study the data in the table. How do you think the lives of many U.S. citizens changed during the Great Depression of the 1930s?

Real GDP Per Capita, 2000–2004
Values in 2000 dollars

Year	Real GDP Per Capita
2000	$34,762
2001	$35,496
2002	$36,391
2003	$37,811
2004	$39,928

Source: *Statistical Abstract of the United States*, 2006, p. 443.

Real GDP Per Capita, 1929–1938
Values in 1929 dollars

Year	Real GDP Per Capita	Year	Real GDP Per Capita
1929	$857	1934	$639
1930	$772	1935	$718
1931	$721	1936	$787
1932	$611	1937	$845
1933	$590	1938	$794

CONNECT TO HISTORY



The Panic of 1907

During the 1800s, economic panics were a familiar feature of the American economy. Before 1907, the economy had suffered through four such events in the course of 34 years. In the summer of 1907, the American economy began another downturn. Each fall, the financial system suffered stress because money was needed to move crops from the Midwest to the markets in the East and Europe. Thousands of banks across the country, needing to maintain their reserves, withdrew cash from the country's 47 regional banks. These banks, in turn, withdrew cash from other banks in one of three cities that acted as central reserves—most notably, New York City. While not unexpected, the situation did cause short-term interest rates to rise. What was different in 1907 was that the money supply did not increase to meet the demand for money. Gold that usually would have flowed into the United States from Europe due to the higher interest rate did not do so. In 1907, the banking system that had been able to contain the earlier panics failed.

The panic accentuated an already declining stock market, which had lost 8.9 percent of its value since March 12. It would bottom out on November 15 with a decline of 39 percent as people turned their investments into cash.

Although the New York banking community pledged to support the New York banks, depositors of the Knickerbocker Trust Company tried to withdraw their deposits. Another bank, not wanting to be stuck with worthless checks, refused to process checks from the Knickerbocker bank. On October 22, $8 million was paid out to depositors and the company closed it doors. New Yorkers lined up outside their banks, fearing for their deposits.

Financier J.P. Morgan decided to take action to restore confidence and end the panic. He called a committee of bankers, which first decided that the Knickerbocker's finances were in such bad shape that it could not be helped. It would be allowed to fail while other more sound banks were helped. The panic extended to banks around the country as they worried that New York banks would refuse them loans, and they began to pull out their reserves.

Morgan and his bankers could not contain the crisis and turned to the federal government. After making a direct plea to President Theodore Roosevelt, Morgan secured the aid of the U.S. government, which agreed to deposit $25 million in New York banks. Industrialist John D. Rockefeller also contributed $10 million in an effort to boost depositor confidence. Morgan also was able to get New York bankers to put another $25 million into ailing banks.

Over the next several weeks, the situation slowly got better. By mid-October, the panic had subsided, but the downturn in the business cycle lasted until June 1908. Banks around the country, afraid of being cut off by larger banks, continued to draw down their reserves and hoarded what cash they had. They stopped extending credit to their customers and stopped making cash payments. Thousands of firms that depended on short-term loans went bankrupt, and thousands of individuals lost their jobs. Much of the trade in the country ground to a halt.

THINK CRITICALLY

The Federal Deposit Insurance Corporation (FDIC), an agency of the federal government, now insures most bank deposits up to a maximum of $100,000. This means that if a bank fails and is unable to repay its depositors, the FDIC will repay them instead. There essentially is no risk of losing money on deposits up to $100,000 in an FDIC insured bank account. Consider how the panic of 1907 might have turned out differently if the FDIC had existed at that time. Explain how the FDIC reduces the chance of a bank panic taking place in today's economy.

11 Chapter Assessment

Summary

11.1 Estimating Gross Domestic Product (GDP)

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a *Gross domestic product (GDP)* measures the market value of all final goods and services produced in a country in a year. GDP can be used to track an economy's performance over time or to compare different economies at a point in time.

b To measure GDP accurately, it is necessary to avoid double counting. This can be done (1) by totaling the value of final goods and services produced or (2) by summing the value added at each stage of the production process.

c The expenditure approach to GDP counts all spending on final goods and services produced in the economy. The income approach totals the value of all income earned producing those goods and services.

d These two methods reach the same total because one person's spending is automatically another person's income.

11.2 Limitations of GDP Estimation

a Several difficulties must be overcome to measure GDP accurately. Chief among these is the complex nature of production. A number of simplifications are made. GDP includes only products that are sold in legal markets. To calculate *net domestic product*, GDP is adjusted for *depreciation*. Finally, GDP usually ignores any changes in the amount of leisure and changes in the cost of pollution arising from production.

b GDP must be adjusted for price changes. Without such an adjustment, it is possible for *nominal GDP* to grow even without an actual increase in the amounts of goods and services produced.

c The *Consumer Price Index (CPI)* measures the change in prices charged for a market basket of goods and services purchased by the typical family. The GDP price index is found by dividing nominal GDP by *real GDP* and multiplying by 100.

11.3 Business Cycles

a Over time, the level of economic activity fluctuates in a fairly regular way. These fluctuations are commonly called the *business cycle.*

b Business cycles involve periods of *expansion* and periods of *recession.* During expansions real GDP grows. Recessions occur when real GDP declines for at least two successive quarters, or at least six months.

c Production tends to increase over time because of (1) increases in the amount and quality of resources, especially labor and capital, (2) improvement in technology, and (3) improvement in the *rules of the game.*

d There are factors within the economy that change with the business cycle. Factors that change before the overall economy changes are *leading indicators.* Those that change at the same time as the overall economy are *coincident indicators.* Those that change after the overall economy are *lagging indicators.*

11.4 Aggregate Demand and Aggregate Supply

a The total production of all goods and services in an economy is called *aggregate output.* The total demand for all goods and services in an economy is called *aggregate demand.*

b The *aggregate demand curve* slopes downward, indicating that the quantity of aggregate output demanded increases as the price level falls. The *aggregate supply curve* slopes upward, indicating that the quantity of aggregate output supplied increases as the price level increases. The economy's price level is determined by the interaction of the aggregate demand and aggregate supply curves.

c Since 1929, real GDP in the United States has increased nearly thirteenfold. The best measure of a nation's standard of living is its real GDP per capita. This has also grown sharply thanks to a more educated work force, more capital, better technology, and improvements in the rules of the game.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The market value of all final goods and services produced in the United States during a given period, usually a year

_____ **2.** The structure of economic activity in a locality, a region, a country, a group of countries, or the world

_____ **3.** Fluctuations reflecting the rise and fall of economic activity relative to the long-term growth trend of the economy

_____ **4.** Measures that usually predict recessions or expansions in the economy

_____ **5.** Household purchases of final goods and services except for new residences, which count as investment

_____ **6.** Total spending on all final goods and services produced in the economy during the year

_____ **7.** The purchase of new plants, new equipment, new buildings, new residences, and net additions to inventories

_____ **8.** The value of capital stock that is used up or becomes obsolete in producing GDP

_____ **9.** GDP based on prices at the time of the transaction; current-dollar GDP

_____ **10.** The economy's aggregate output measured in dollars of constant purchasing power; GDP measured in terms of the goods and services produced

_____ **11.** A composite measure reflecting the prices of all goods and services in the economy relative to prices in a base year

_____ **12.** A measure of inflation based on the cost of a fixed market basket of goods and services purchased by a typical family

_____ **13.** A decline in the nation's total production lasting at least two consecutive quarters, or at least six months

_____ **14.** The phase of economic activity during which the economy's total output increases

a. aggregate demand
b. aggregate demand curve
c. aggregate expenditure
d. aggregate income
e. aggregate output
f. aggregate supply curve
g. business cycle
h. consumer price index (CPI)
i. consumption
j. depreciation
k. economy
l. expansion
m. gross domestic product (GDP)
n. investment
o. leading economic indicators
p. nominal GDP
q. price level
r. real GDP
s. recession

Review Economic Concepts

15. Which of the following would be included in GDP?

a. the entire value of a used car your family purchased

b. the amount you received in your pay check

c. the weekly allowance your parents give you

d. the $50 you received from your aunt for your birthday

16. The __?__ is a method of measuring GDP that adds up all spending on final goods and services produced in the economy.

17. **True or False** If you bake a cake from a cake mix and sell it for $8, you have added $8 to GDP.

18. __?__ GDP has not been adjusted for changes in price.

19. If last year's *consumer price index* was 185.0, and this year's is 192.4 how much inflation has there been in the past year?
    a. 7.4%
    b. 3.8%
    c. 5.0%
    d. 4.0%

20. **True or False** The value of capital *depreciation* is not considered when GDP is calculated.

21. __?__ usually predict what is likely to happen to the economy in the near future.

22. **True or False** A *business cycle* will affect all states, people, and businesses equally.

23. The *business cycle* consists of two phases that are called
    a. expansions and recessions.
    b. recessions and contractions.
    c. inflation and recessions.
    d. expansions and inflation.

24. *Aggregate demand* and *aggregate supply* interact to determine
    a. business profits.
    b. government tax receipts.
    c. investment.
    d. real GDP and the price level.

Apply Economic Concepts

25. **Measuring GDP** Identify which of the following activities would be included in the measurement of GDP. For those that would be included, tell whether they would be used in the income approach or expenditure approach.

Activity	Included in GDP?	Expenditure Approach	Income Approach
Buying a used bicycle	_____	_____	_____
Paying for a movie ticket	_____	_____	_____
Being paid to sell magazines	_____	_____	_____
Buying a new coat	_____	_____	_____
Mending your own shirt	_____	_____	_____
Earning interest on your savings	_____	_____	_____
Earning profit from a business	_____	_____	_____
Paying a toll to use a bridge	_____	_____	_____

26. **Calculating Real GDP** Suppose the nominal gross domestic product of Germany was 3,420 billion euros in 2007 and 3,560 billion euros in 2008. Between the same years, the German CPI increased from 120.0 to 122.4. What was the real growth in Germany's real GDP in this time period?

27. **Evaluating Leading Indicators** Suppose the following events took place in the U.S. economy. Explain why each would be a leading indicator and what each would predict about future economic activity in the U.S. economy.

- The value of the stock market increases by 12 percent.
- The number of orders businesses have received but not filled falls by 8 percent.
- The number of hours employees work each week grows from 42.1 to 44.6.
- Business inventories of finished goods decline by 20 percent.

28. Sharpen Your Skills: Evaluate Data The data in the table indicate real spending in the economy in the years from 2000 through 2005. Use these data to calculate the real GDP for each of these years. How much growth was there in the real GDP from 2000 through 2005?

Real Spending in the U.S. Economy, 2000–2005
Values in Billions of 2000 dollars

Year	Consumption	Investment	Government	Net Exports
2000	$6,739.4	$1,735.5	$1,721.6	−$379.5
2001	$6,910.4	$1,597.3	$1,780.3	−$399.1
2002	$7,009.3	$1,553.9	$1,858.8	−$471.3
2003	$7,306.6	$1,609.9	$1,911.1	−$521.4
2004	$7,588.6	$1,800.5	$1.952.3	−$601.3
2005	$7,856.9	$1,911.2	$1,987.1	−$633.1

Source: *Economic Indicators*, May 2006, p. 2.

29. Mathematics In 2005, real GDP was $11,135 billion. Suppose that the real GDP for the United States increased at the following rates in the five years following 2005. Calculate the real value of GDP in 2000 dollars for each of these years. What would this mean for aggregate demand and supply in our economy?

Year	Rate of Increase in Real GDP	Real GDP in Billions
2006	2.4%	____
2007	2.6%	____
2008	3.3%	____
2009	4.1%	____
2010	2.5%	____



30. Access **EconNews Online** through thomsonedu.com/school/econxtra. Read the article on Real Gross Domestic Product (GDP). Is it possible for nominal GDP to rise at the same time real GDP declines? Why or why not? For help with answering this question, access the data series for nominal GDP and real GDP. These links are provided on the second page of the article.

12 Economic Growth

12.1 The PPF, Economic Growth, and Productivity

12.2 Living Standards and Labor Productivity Growth

12.3 Issues of Technological Change



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CONSIDER

Why is the standard of living so much higher in some countries than in others?

How can a nation boost its standard of living?

Why is the economy's long-term growth rate more important than short-term fluctuations in economic activity?

What is labor productivity, and why has it grown faster in recent years?

Are firms or are governments better positioned to identify the growth industries of the future?

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12.1 The PPF, Economic Growth, and Productivity

Objectives

- Use the production possibilities frontier to analyze economic growth.
- Define labor productivity, and discuss what can increase it.

Overview

Throughout history, economic growth has been the primary way of easing poverty and raising living standards. Over the last century, there has been an incredible increase in the U.S. standard of living as measured by the goods and services available per capita. An economy's standard of living grows because of (1) increases in the amount and quality of resources, (2) better technology, and (3) improvements in the rules of the game—such as tax laws, property rights, patent laws, the legal system, and customs of the market—that enable production and exchange.

Key Terms

standard of living
productivity
labor productivity
human capital
physical capital
capital deepening
rules of the game

In the News

The Chinese Are Coming on Strong

With its eleventh Five-Year Program, China took another step away from a command economy toward one that is market based. While its GDP growth has averaged 9.5 percent over the past 25 years, most of this growth has been driven by exports and investment. Many economists question whether this model can be sustained without a vibrant consumer sector. As other countries impose more restrictions on Chinese imports and as growing investment leads to excess capacity, the Chinese are looking toward other ways to grow the economy. The likely candidate for future growth is consumer spending. The most recent Five-Year Program is an attempt to shift the nation's economy to support consumer-led growth. To do so will depend on the success of the government's efforts to change the attitudes of Chinese consumers. Consumer demand is low in China as people are not used to providing for themselves. The savings rate is especially high as people save for their old age. The difficulty of rebalancing the economy will be complicated by rising unemployment. The government hopes that income support to low-paid workers and efforts to expand the service sector will aid in this transformation.

THINK ABOUT IT

Will China be able to sustain its impressive growth rate during this period of transition?

Source: "Asia Monitor: China & North East Asia," *Business Monitor International,* May 2006; "China," *Economist Intelligence Unit,* 2006.

The PPF and Economic Growth

The easiest way to introduce the idea of economic growth is to begin with the production possibilities frontier, or PPF. The *production possibilities frontier,* first introduced in Chapter 2, shows alternative combinations of goods that the economy can produce if available resources are used efficiently. Here are the assumptions used to develop the frontiers shown in Figure 12.1. During the period under consideration, usually a year, the quantity of resources in the economy and the level of technology are assumed to remain unchanged. Also assumed fixed during the period are the rules of the game that enable production and exchange. These "rules" will be discussed at the end of this section.

In Figure 12.1, production is sorted into two broad categories—consumer goods and capital goods. Capital goods are used to produce other goods. For example, the economy can make both pizzas and pizza ovens. Pizzas are consumer goods, and pizza ovens are capital goods.

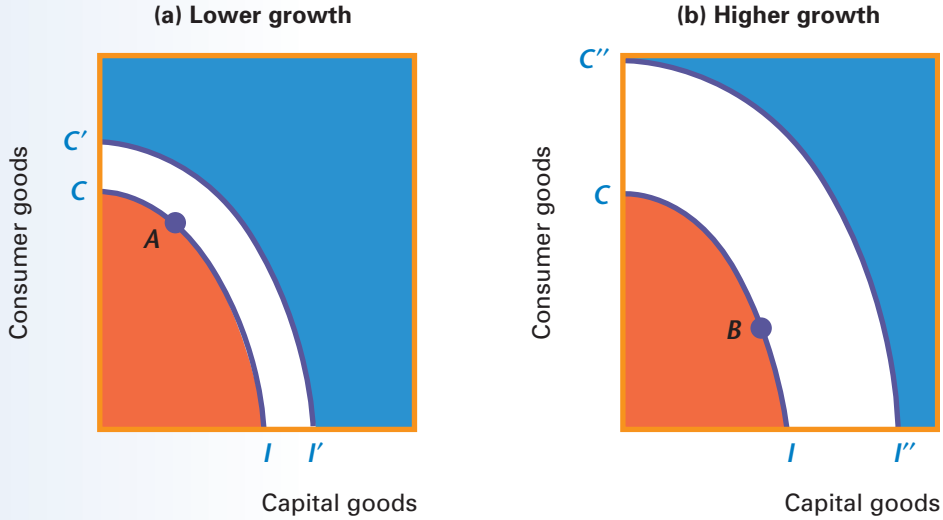
When resources are employed efficiently, the production possibilities frontier *CI* in each panel of Figure 12.1 shows the possible combinations of consumer goods and capital goods that can be produced in a given year. Point *C* depicts the quantity of consumer goods produced if all the economy's resources are employed efficiently to produce them. Point *I* depicts the same for capital goods. Points inside the frontier are inefficient. Points outside the frontier are unattainable, given the resources, technology, and rules of the game. The production possibilities frontier is bowed out because resources are not perfectly adaptable to the production of both goods. Some resources are specialized and better suited for a particular good.

Economic Growth and the PPF

An outward shift of the production possibilities frontier reflects economic growth. This is shown in each panel of Figure 12.1. What can generate this growth? Any increase in the availability of resources, such as a growth in the labor supply or in the capital stock, shifts the frontier outward. Labor can increase because of an increase in either the quantity or the quality of labor. For example, growth in the population can increase the number of workers. An increase in education levels can increase the quality of workers. The greater the quantity or quality of workers, the more the economy can

Economic Growth Shown by Outward Shifts of the Production Possibilities Frontier — **Figure 12.1**

An economy that produces more capital goods will grow more, as shown by a shifting outward of the production possibilities frontier. More capital goods and fewer consumer goods are produced at point B in panel (b) than at point A in panel (a), so the PPF shifts outward more in panel (b).



grow, as shown by an outward shift of the PPF.

The capital stock expands if the economy produces more capital goods this year. Any improvement in technology also expands the frontier by making more productive use of existing resources. Technological change often improves the quality of capital goods.

Finally, any improvements in the rules of the game—such as tax laws, property rights, patent laws, the legal system, and customs of the market—that encourage production and exchange will promote growth and expand the frontier. For example, the economy can grow as a result of a patent law revision that encourages more inventions or legal reforms that lower transaction costs. In summary, *the economy grows because of a greater availability of resources, an improvement in the quality of resources, technological breakthroughs that make more productive use of resources, or improvements in the rules of the game that boost production incentives.*

Capital and Growth

The amount of capital produced this year will affect the location of the PPF next year. For example, in panel (a) of Figure 12.1, the economy has chosen point *A* from possible points along *CI*. The capital produced this year shifts the PPF next year out to $C'I'$. However, if more capital is produced this year, as reflected by point *B* in panel (b), the economy will grow more next year. The PPF will shift farther outward next year, to $C''I''$.

An economy that produces more capital this year is said to *invest* more in capital. As you can see, to invest more in capital goods, people must give up some consumer goods. Thus, the opportunity cost of more capital goods this year is having fewer consumer goods available this year. More generally, to invest in capital, people in the economy must save more now—that is, they must give up some current consumption. Investment cannot occur without saving. Economies that save more can invest and grow more.

✓ CHECKPOINT

How can the PPF be used to show economic growth?

Productivity

Productivity measures how much output is produced from given inputs. In simplest terms, the greater the productivity,

Main Idea

Growth

Investments that increase the quality and quantity of capital per worker contribute to rising labor productivity. *This, in turn, leads to more output per worker, and higher standards of living.*



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the more goods and services can be produced from a given amount of resources. Economies that use resources more productively create a higher standard of living, meaning that more goods and services are produced per person. The **standard of living** is an economy's level of prosperity as measured by the value of goods and services produced on average per person.

standard of living
An economy's level of prosperity; best measured by the value of goods and services produced on average per person

Labor Productivity

Productivity compares total output to a specific measure of input. It usually reflects an average, expressing total output divided by the amount of a particular kind of resource employed, such as bushels of grain per acre of farm land. **Labor productivity** is the output per unit of labor. It measures total output divided by the hours of labor employed to produce that output.

productivity
Compares total output to a specific measure of input; usually reflects an average, such as bushels of grain per acre of farm land

labor productivity
Output per unit of labor; measured as total output divided by the hours of labor employed to produce that output

Economists can focus on the productivity of any resource, such as labor, capital, or land. When agriculture accounted for the bulk of output in the economy, land productivity, such as bushels of grain per acre, shaped the standard of living. Where soil was rocky and barren, people were less well off than where soil was fertile and fruitful. Even today, in many countries around the world, land productivity determines the standard of living.

Industrialization and trade have freed many economies from dependence on land fertility. Today some of the world's most productive economies have relatively little land or have land of poor fertility. For example, Japan has a relatively high living standard even though its population, which is about 40 percent that of the United States, lives on a land area that is only 4 percent of the U.S. land area. Put another way, compared to the United States, Japan has only one tenth the land area per capita.

Human and Physical Capital

Labor is the resource most commonly used to measure productivity. Why labor? First, labor accounts for a large share of the cost of production—about 75 percent on average. Second, labor is more easily measured than other inputs, whether it's in hours of work per week or number of full-time workers per year. Measures of employment and hours worked are more readily available and more reliable than measures of other resources.

The resource most responsible for increasing labor productivity is capital. The two broad categories of capital are human capital and physical capital. **Human capital** is the accumulated knowledge, skill, and experience of the labor force. As individual workers acquire more human capital, their productivity and incomes grow. That's why surgeons earn more than barbers, and accountants earn more than file clerks. You are reading this book right now to increase your human capital.

human capital
The accumulated knowledge, skill, and experience of the labor force

Physical capital, or *capital goods,* includes the machines, buildings, roads, airports, communications networks, and other manufactured creations used to produce goods and services. Think about the difference between digging a ditch with your bare hands and digging it with a shovel. Now compare that shovel to using an excavating machine, such as a backhoe. More physical capital obviously makes a digger more productive.

physical capital
The machines, buildings, roads, airports, communications networks, and other manufactured creations used to produce goods and services; also called capital goods

As an economy accumulates more human and physical capital per worker, labor productivity increases and the standard of living grows. The most productive combination of all is abundant human capital combined with the best physical capital. For example, one certified public accountant with a fast computer and sophisticated software can sort out a company's finances more quickly and more accurately than could a hundred high-school-educated file clerks with pencils and paper.

NET Bookmark

Access the Bureau of Labor Statistics (BLS) web page on Productivity and Costs through thomsonedu.com/school/econxtra. Find the latest news release on productivity and costs. Read the information about productivity and costs in the manufacturing sector of the U.S. economy. Then summarize the trends in one or two sentences.

thomsonedu.com/school/econxtra



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Why do you think human capital is more productive in combination with physical capital?

ETHICS IN ACTION

Training Foreign Workers to Take Your Job

To reduce costs, a growing number of technology companies in the United States are replacing U.S. workers with less-expensive foreigners. In many cases, the U.S. workers are paid to train their own replacements before being laid off. The situation is spurred by the government's nonimmigrant visa program and the L-1 classification. The L-1 visa permits companies to transfer workers from overseas offices to the United States for five to seven years. Moreover, the L-1 allows those companies to pay the foreign workers what they would be earning in their own country. Interestingly, according to a recent Department of Homeland Security report, 9 out of 10 companies using the visa are computer and information-technology related. Why? Because an American computer programmer earns about $60,000 to $80,000 in wages and benefits. Indian, Pakistani, or Chinese programmers working in their native countries receive as little as one quarter of that figure.

THINK CRITICALLY

Do you think importing less-expensive replacement foreign workers via the L-1 visa in order to have them trained by the American workers is an ethical business practice? Why or why not?

Sources: Ephraim Schwartz, "Reality Check: Homeland Security Probes L-1 Visa Abuses," Infoworld Media Group, March 21, 2006 at www.infoworld.com/article/06/03/21/76507_13OPreality_1.html; "Conflicting Views in U.S. Congress on Immigration," Press Trust of India, November 20, 2005.

Capital Deepening

rules of the game
The formal and informal institutions that provide production incentives and promote economic activity, such as laws, customs, and conventions

Two kinds of changes in capital can improve worker productivity:

1. An increase in the *quantity* of capital per worker, and
2. An improvement in the *quality* of capital per worker, as reflected by technological change.

More capital per worker and better capital per worker generally result in more output per worker.

capital deepening
An increase in the quantity and quality of capital per worker; one source of rising labor productivity

An increase in the quantity and quality of capital per worker is called **capital deepening**. This is one source of rising labor productivity. *Capital deepening contributes to labor productivity and to economic growth.* Over time, more output per worker translates into more output per person, meaning a higher standard of living.

Changes in the *quantities* of labor and capital account for less than half of economic growth. Most growth comes from improvements in the *quality* of resources. As technological breakthroughs lead to new and better capital, total output increases. Thus, *capital serves as the primary engine for economic growth.*

Rules of the Game

Perhaps the most complex ingredients of productivity and growth are the **rules of the game**. These include the formal and informal institutions that provide production incentives and promote economic activity. Rules of the game include the laws, customs, and conventions that encourage people to undertake productive activity. A stable political environment and a system of well-defined property rights are important. Little investment will occur if potential investors think their capital might be taken over by government, stolen by thieves, destroyed by civil unrest, or blown up by terrorists.

Improvements in the rules of the game can affect the incentives that reward successful innovation and investment. Better incentives can boost economic growth and improve the standard of living. For example, a more stable political climate could promote investment in the economy. Conversely, destabilizing events such as wars and terrorist attacks can discourage investment and harm productivity and economic growth.

✓ CHECKPOINT

What is labor productivity, and what can increase it?



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What "rule" do you think this sign represents? How would it affect productivity in the economy?

Assessment 12.1

Key Concepts

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1. Why does the U.S. production possibilities frontier shift outward in May and June of each year? What does this have to do with the graduation of many students from high school or college?
2. Why is it more difficult for poorer nations to invest in capital goods than it is for wealthier nations?
3. Why wouldn't the act of giving new computers to the rural residents of a less-developed country add much to that nation's labor productivity?
4. How is capital deepening demonstrated by an increased number of students who purchase computers to help them in their studies?
5. How could a cut in payroll taxes make businesses more productive?

Graphing Exercise

6. Use the data in the table to construct a bar graph of investment in physical capital during the early 2000s. Explain how changes in the level of investment in physical capital are likely to affect productivity in our economy.

Year	Investment in Physical Capital (in billions of 2000 dollars)
1999	$1,559
2000	$1,679
2001	$1,646
2002	$1,568
2003	$1,667

Source: *Statistical Abstract of the United States,* 2006, p. 523.

Think Critically

7. **Management** You are the president of a small corporation. Your firm was profitable last year and could afford to increase dividends. You, however, think those funds should be used to purchase a new computer system to improve your firm's efficiency. Write a letter to your firm's stockholders, explaining the benefits of your proposed use of the firm's profit.
8. **Research** Use newspapers or Internet sources to find information about college programs you might enroll in to improve your human capital. Explain how completing a college degree could increase your productivity.

Sharpen Your Skills



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Categorize Information

Each of the following events contributed to the stock of either human capital or physical capital in the United States. Make two lists. The term human capital should head the first one and physical capital should head the second. Then place each event in the appropriate list. Some of these events may have contributed to stocks of both human and physical capital. Describe how each of the following recent events contributed to increased productivity in the U.S. economy.

A. More than $264 billion was spent on research and development in the United States.

B. More than 2.5 million students graduated from high school.

C. The U.S. government provided more than $85 billion in aid for education.

D. Eighty-one percent of all public-school students attended schools that had some access to the Internet. Fifty-three percent of all schools provided access to the Internet for instruction in at least one classroom.

E. U.S. government agencies provided grants of more than $17 billion to colleges and universities for research and development.

F. The federal Small Business Administration (SBA) provided more than $48 billion in loans to businesses.

G. U.S. businesses spent more than $758 billion to purchase new machinery

H. More than 88 million seats were taken by adults in continuing education courses.

Apply Your Skill

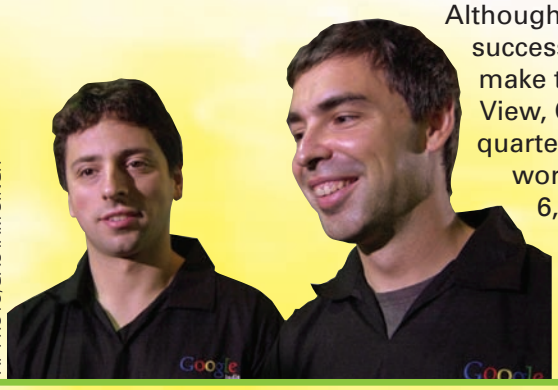
1. In 1998, a law was passed that eliminated federal taxes on interest earned on U.S. savings bonds that was used to pay for the education of taxpayers or their children. Was this law intended to encourage investment in human or physical capital? Explain your answer.
2. Soon after 2000, the state of New York passed a law that allowed residents to deduct as much as $2,000 from their state income tax liability if they purchased a new hybrid gasoline/electric-powered automobile. Was this law intended to encourage investment in human or physical capital? Explain your answer.

movers & shakers

Larry Page and Sergey Brin *Google founders*

Larry Page and Sergey Brin were not especially fond of each other when they met in 1995. Both were graduate students in computer science at Stanford University. They argued constantly. A common interest kept them as working partners, however. Both were fascinated by the challenge of retrieving relevant information from a massive set of data. Within a year they created a search engine with a unique ability to analyze the "back links" pointing to a given web site. It didn't take long for the search engine to gain notoriety on campus.

Their credit cards maxed out, Page and Brin needed investors if they were to make it big with the search engine they now called Google. Together they persuaded two venture-capital firms to invest at the same time. Doing so prevented either investor from asserting control, keeping Page and Brin in charge. Eventually the two hired industry expert Eric Schmidt as Google chairman and CEO. Page and Brin still have a say in major decisions.



AP PHOTO/GAUTAM SINGH

Although serious about success, Page and Brin make their Mountain View, California, headquarters a fun place to work. The company's 6,000 employees enjoy such perks as billiards rooms, swimming pools, heavily discounted haircuts and massages on-site, three free gourmet meals a day, and electric scooters. Employees may bring their dogs to work, but no cats are allowed. In return, employees are expected to divide their work hours into three parts: 70 percent devoted to Google's core business; 20 percent to pursuits related to the core business; and 10 percent on far-out ideas.

Believing that one can be serious without wearing a suit, Page and Brin set the tone by wearing jeans, sneakers, and a black tee shirt to work every day. When serious decision-making is needed, they wear white lab coats. Although their dress is casual, the two are driven to be the best. "Great just isn't good enough," is on the company's list of Ten Things We've Found to be True. Number One on the list is "Focus on the user and all else will follow," indicating that in spite of the perks, employees keep the consumer top in their mind. Users don't pay for Google. Revenue is generated from selling its search technology to other companies and from the sale of advertising.

Today "google" is a household verb, frequently replacing "search" in everyday conversation. The company in mid 2006 was valued at $121 billion, which was eight times more than General Motors. Not bad for a couple of thirty-something computer geeks.

SOURCE READING

Describe how Google has had an effect on capital deepening in the U.S. workforce. Name some careers that have improved productivity because of Google's technology.

ENTREPRENEURS IN ACTION

Page and Brin go to great lengths to make their headquarters an attractive place to work. How does the company benefit from these employee perks? Are there disadvantages to so many perks?

Sources: *Time*, February 20, 2006, cover story; www.google.com/corporate/history.html; www.usnews.com/usnews/news/articles/051031/31google.htm.

12.2 Living Standards and Labor Productivity Growth

Objectives

- Explain why there is such a large difference among countries in the standard of living.
- Evaluate the record of U.S. labor productivity growth, and explain why even small differences in growth rates are important.

Overview

The single most important determinant of a nation's standard of living over the long run is the productivity of its resources. A nation prospers by getting more from its resources. Even a relatively small growth in productivity, if continued for years, can have a huge effect on living standards—that is, on availability of goods and services per capita. Growing productivity is critical to a rising standard of living. It has kept the United States ahead of every other major economy in the world.

Key Terms

industrial market countries

developing countries

Group of Seven (G-7)

In the News

Standard of Living and the Poverty Threshold

Living standards change over time. However, no matter what the standard of living, poverty exists in all countries to some degree. In 1963, Mollie Orshansky of the U.S. Social Security Administration developed the idea of identifying a certain income level that she termed the "poverty threshold." If an individual or family received less than that amount in income each year, they would be considered as living in poverty. Orshansky started with the fact that food spending usually was 30 percent of total spending for food, clothing, and shelter. She then based her figures on how much it would cost to buy the necessary amount of food called for in the Department of Agriculture's "economy food plan." The percentage living in poverty in the United States has been at or near its all-time low for more than a decade—between 11 and 12 percent, or about 37 million people. For individuals the poverty line in 2006 was $10,160 per year, up from $1,539 in 1963. Similarly, the level for a family of four has risen from $3,169 in 1963 to $19,806. However, today families spend only around 12 percent of their income on food, yet the assumptions made in the 1950s remain the same. With billions of dollars in federal spending linked to the definition of poverty, economists agree that the country needs a measure of the poverty line that more accurately reflects modern conditions.

THINK ABOUT IT

Unlike most economic statistics, the poverty line is set by the White House, not by the Bureau of Economic Analysis or the Bureau of Labor Statistics. Why don't politicians insist on a more accurate poverty indicator?

Source: Anna Bernasek, "A Poverty Line That's Out of Date and Out of Favor," *New York Times,* March 12, 2006.

Standard of Living

There are vast differences in the standards of living among countries. For example, per capita output in the United States is more than 50 times that of the world's poorest countries. With only 5 percent of the world's population, the United States produces more than the nations making up the bottom 50 percent of the world's population put together. You might say that poor countries are poor because they experience low labor productivity.

Industrial and Developing Economies

The world's economies can be sorted into two broad groups. **Industrial market countries**, or *developed countries,* make up about 20 percent of the world's population. They include the advanced market economies of Western Europe, North America, Australia, New Zealand, and Japan. Industrial market countries were the first to experience long-term economic growth during the nineteenth century. Today they have the world's highest standard of living, based on their abundant human and physical capital.

The rest of the world—the remaining 80 percent of the population—consists of **developing countries**, which have a lower standard of living because they have relatively little human and physical capital. On average, more than half the workers in developing countries are in agriculture. Farming methods in developing countries are often primitive. Labor productivity there is low, and most people barely subsist. In the United States, only about 2 percent of all workers are in agriculture. However, U.S. farmers are so productive that they grow enough to feed the nation and export to other countries.

Education and Economic Development

An important source of productivity is the quality of labor—the skill, experience, and education of workers. If knowledge is lacking, other resources may not be used efficiently. For example, a country may have fertile land, but farmers there lack knowledge of irrigation and fertilization techniques.

What exactly is the contribution of education to the process of economic development? Education makes workers more aware of the latest production techniques and more receptive to new ideas and methods. Countries with the most advanced educational systems also were the first nations in the world to achieve a high level of economic development.

One distinguishing feature between industrial economies and developing economies is the literacy of the population. Literacy is the ability to read and write. Among countries that make up the poorest third of the world's population, most adults are illiterate. In contrast, less than 5 percent of adults in industrial market economies are illiterate.

industrial market countries

The advanced market economies of Western Europe, North America, Australia, New Zealand, and Japan; also called developed countries

developing countries

Countries with a lower standard of living because they have relatively little human and physical capital



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The farm workers in this photo are planting onions. Do you think this photo was taken in a developed country or in a developing country? Why?

Group of Seven (G-7)
The seven leading industrial market economies, including the United States, United Kingdom, France, Germany, Italy, Japan, and Canada

Figure 12.2 shows the average years of schooling of the working-age population in the United States and six other leading industrial market economies. Together these seven economies are called the **Group of Seven (G-7)**. In 1970, the average education of the U.S. working population was 11.6 years. This was higher than any other nation in the world. Among other advanced economies, average education ranged from a low of 6.6 years in Italy to 11.3 years in Canada. By 2002, the U.S. education average had grown to 12.7 years, but other countries had become even more educated. Americans tied for third with the United Kingdom behind Germany, at 13.4 years, and Canada, at 12.9 years.

✓ CHECKPOINT

Why is there such a difference among countries in standard of living?

Investigate Your Local ECONOMY

Research the average years of schooling of adults in your state for more than one year. Then determine the gross state product per capita for your state for the same years. Is there a correlation?

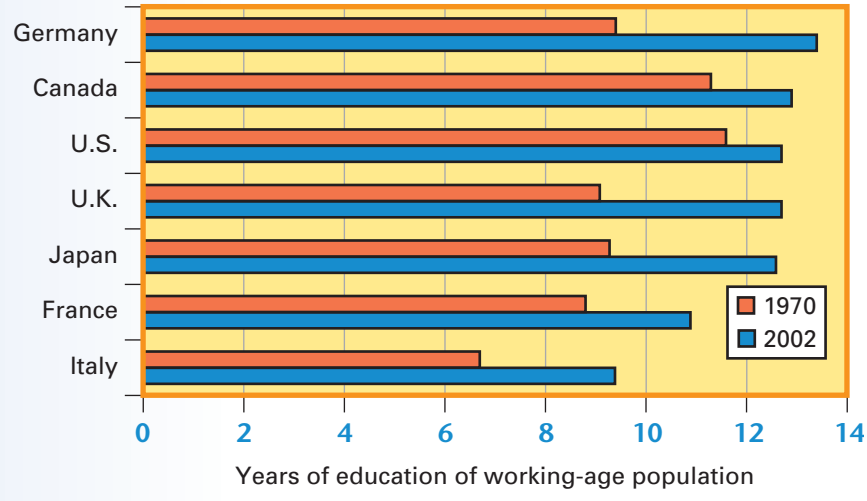
U.S. Labor Productivity and Output Per Capita

Labor productivity is measured by real output per work hour. The higher the level of labor productivity, the more output per labor hour and the higher the standard of living in the economy. Thus, differences across economies in labor productivity determine differences in living standards. The key to a rising standard of living is the growth in labor productivity.

Average Years of Education of Working-Age Populations in 1970 and 2002 — **Figure 12.2**

The United States has been surpassed by Germany and Canada in average years of education of its working-age population.

Source: Based on estimates developed by the Organization for Economic Cooperation and Development. Averages are for the 25- to 64-year-old population.



Record Over the Long Run

Figure 12.3 offers a long-run perspective, showing U.S. productivity growth stretching back more than a century. Annual productivity growth is averaged by decade. Note the slowdown during the 1930s because of the Great Depression and the rebound during the 1940s because of World War II. Productivity growth slowed again during the 1970s and 1980s but recovered after 1990.

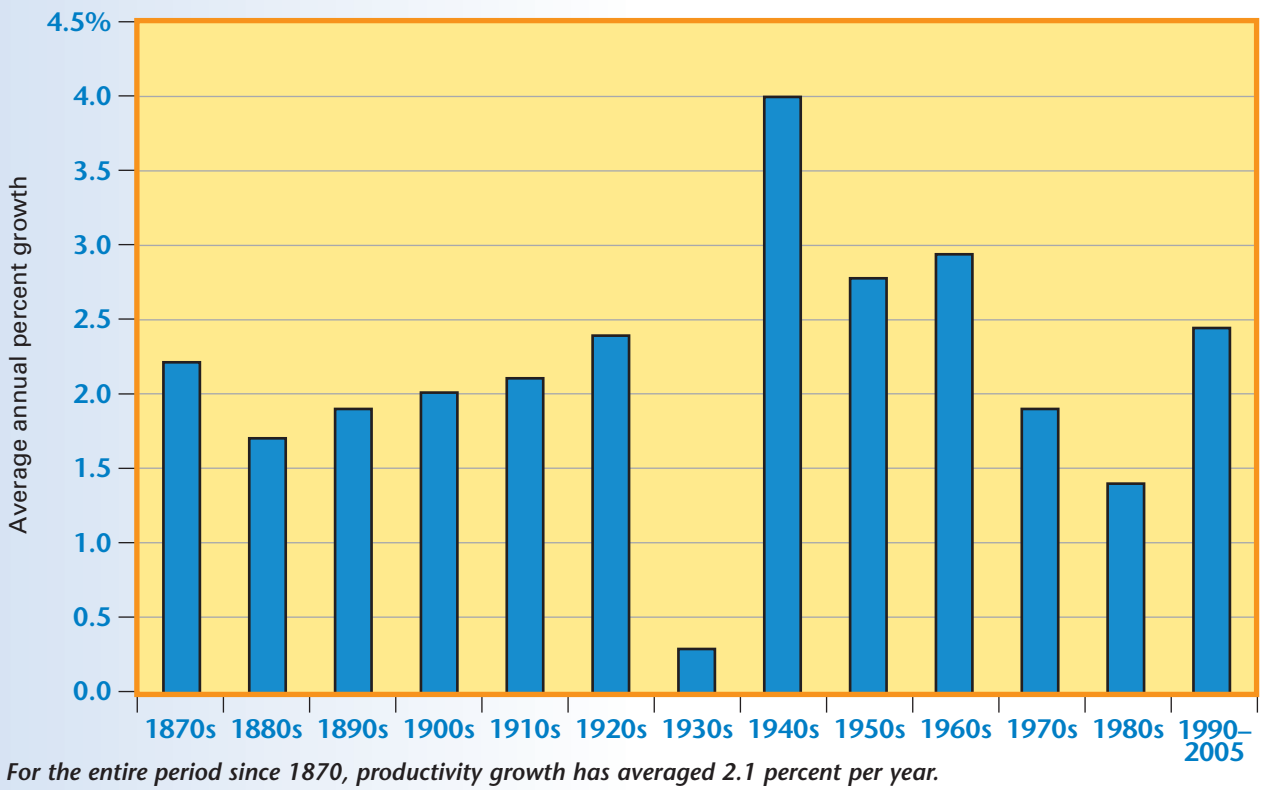
For the entire period since 1870, productivity growth averaged 2.1 percent per year. This may not seem like much, but growth has a powerful cumulative effect. Real output per work hour has grown a total of 1,550 percent since 1870. To put this in perspective, if a carpenter in 1870 could build one house in a year, today's carpenter could build 16.5 houses in a year.

Small differences in productivity growth can amount to huge differences in the economy's ability to produce and, therefore, in the standard of living. For example, if productivity growth had averaged only 1.1 percent per year instead of 2.1 percent, output per work hour since 1870 would have increased by only 338 percent, not 1,550 percent. On the other hand, if productivity growth had averaged 3.1 percent per year, output per work hour since 1870 would have jumped more than 6,000 percent! The wheels of progress seem to grind slowly, but the cumulative effect can be powerful.

Slowdown and Rebound in Productivity Growth

You can see in Figure 12.3 that productivity growth declined during the 1970s and 1980s and recovered since 1990. To focus on productivity trends since World War II, Figure 12.4 offers the average annual growth for four distinct periods.

Long-Term Trend in U.S. Labor Productivity Growth: Annual Average by Decade — **Figure 12.3**



For the entire period since 1870, productivity growth has averaged 2.1 percent per year.

Sources: Angus Maddison, *Phases of Capitalist Development* (New York: Oxford University Press, 1982) and U.S. Bureau of Labor Statistics.

Labor productivity growth declined from an average of 2.9 percent per year between 1948 and 1973 to only 0.8 percent between 1974 and 1982. The annual rate of growth in labor productivity from 1974 to 1982 averaged less than a third the rate during the quarter century following World War II. Except for the Great Depression, the annual rate of growth in labor productivity during 1974 to 1982 was below the annual average for any decade during the previous century.

Why the slowdown? First, the price of oil quadrupled from 1973 to 1974 as a result of OPEC actions. Spikes in energy prices fueled inflation during the period. This contributed to three recessions, which slowed productivity growth. Second, in the early 1970s, several laws were passed to protect the environment and improve the quality and safety of the workplace. These measures ultimately led to cleaner air, purer water, and safer working conditions. However, they also required more costly production methods. Productivity growth slowed down as these costlier methods were introduced. Third, high and variable inflation during the period introduced more business uncertainty. Firms had to spend more time coping with inflation, and this reduced labor productivity.

Fortunately, annual productivity growth rebounded off the lows of 1974 to 1982, growing 1.8 percent from 1983 to 1995 and 2.9 percent from 1996 to 2005. This was the average from 1948 to 1973. Why the rebound? The most dramatic technological development in recent years has been the information revolution powered by computers and the Internet. New technology helps workers produce more. Computers also increase the flexibility of machines, which can be reprogrammed for different tasks. See the E-conomics feature on page 366 for a discussion about the effects of computers on productivity growth.

Higher labor productivity growth easily can make up for output lost during recessions. For example, if over the next 10 years U.S. labor productivity grows an average of 2.9 percent per year (the average from 1996 to 2005) instead of 1.8 percent (the average from 1983 to 1995), in the tenth year, real GDP will be $1.5 trillion higher. This would more than make up for the output lost during two typical recessions. *This cumulative power of productivity growth is why economists now worry less about short-term output fluctuations due to the business cycle and more about long-term growth in productivity.*

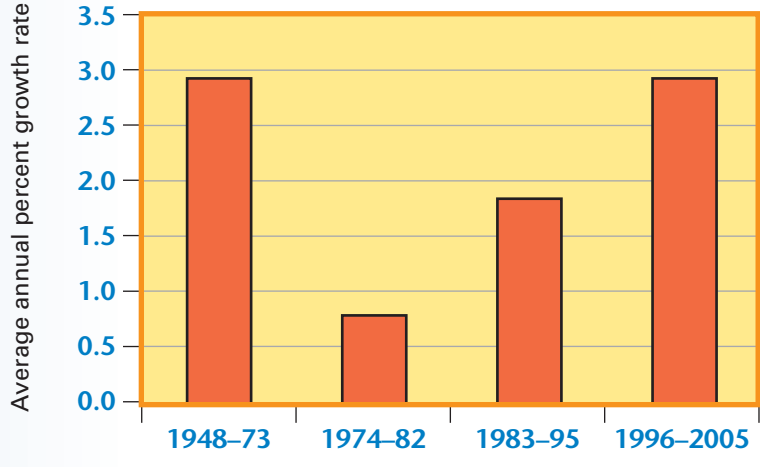
Output Per Capita

So far, the focus has been on rising labor productivity as an engine of economic growth—that is, growth achieved by getting more output from each hour

U.S. Labor Productivity Growth **Figure 12.4**

Growth in labor productivity in the United States slowed during 1974 to 1982 and then rebounded. Most recently, average productivity growth has reached where it had been during the 1948–73 period.

Source: Averages based on annual estimates from the U.S. Bureau of Labor Statistics.



worked. Even if labor productivity remained unchanged, real GDP would grow if the quantity of labor increased. Total output can grow as a result of greater labor productivity, more labor, or both.

The best measure of an economy's standard of living is output per person, or per capita. *Output per capita,* or real GDP divided by the population, indicates how much an economy produces on average per resident. Labor productivity in the U.S. economy in 2005 was about $75,000 per worker per year. In the United States, about one of every two people in the economy is a worker. Therefore, *output per capita* equals output per worker divided by two. In this example, output per capita would be $75,000/2, or $37,500.

Figure 12.5 presents real GDP per capita for the United States since 1959. Notice the general upward trend, interrupted by seven recessions, indicated by the pink shading. Real GDP per capita nearly tripled (measured in 2000 dollars) from about $13,800 in 1959 to about $37,500 in 2005 for an average annual growth rate of 2.2 percent. Since 1959, labor productivity grew an average of 2.1 percent. Output per capita grew faster than did labor productivity because the amount of labor grew faster than the population did.

International Comparisons

How does U.S. output per capita compare with that of other major industrial economies? Figure 12.6 compares GDP per capita for the United States in 2004 with the six other leading industrial nations. The United States produced more output per capita than any other major economy.

✓ CHECKPOINT

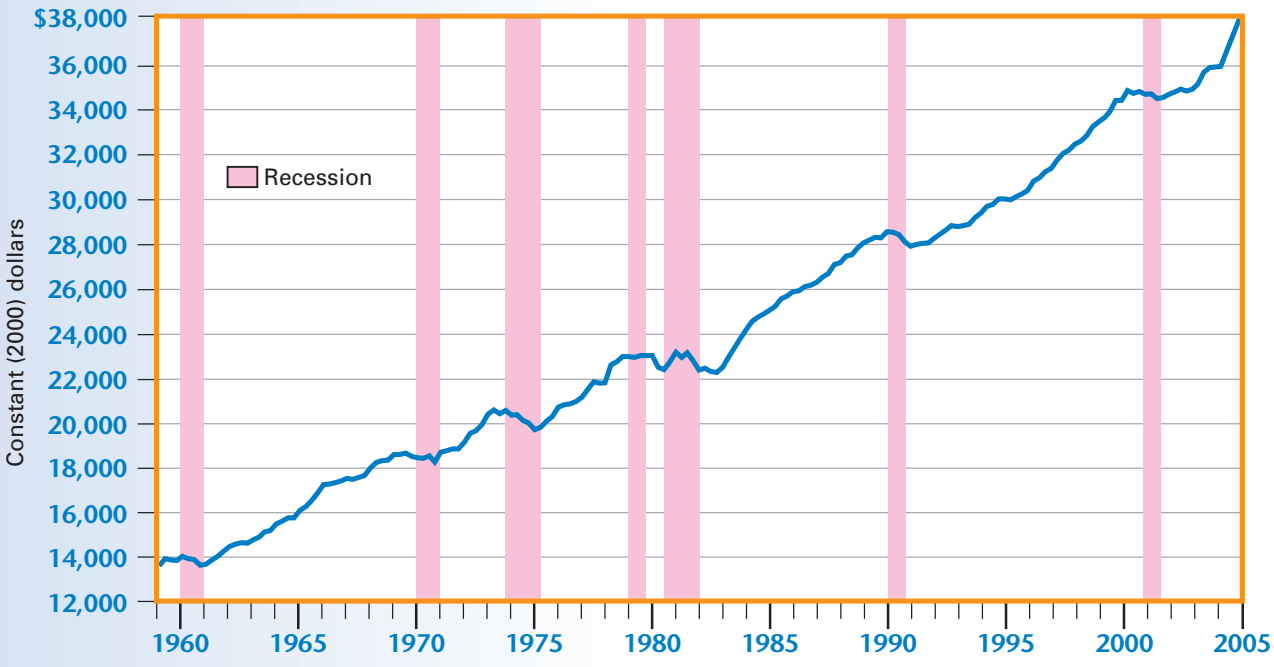
What has been the record of U.S. labor productivity growth, and why are even small differences in average growth important?

Ask the Xpert!

thomsonedu.com/school/econxtra

Have computers affected worker productivity?

U.S. Real GDP Per Capita Since 1959 — **Figure 12.5**



Despite the seven recessions since 1959, U.S. real GDP per capita has nearly tripled. Periods of recession are indicated by the pink-shaded columns.

Source: U.S. Department of Commerce.

e-conomics

COMPUTERS AND PRODUCTIVITY GROWTH

The first microprocessor, the Intel 4004, could carry out about 400 computations per second when it hit the market in 1971. Less than five years later, Intel's co-founder, Gordon Moore, enunciated what became known as Moore's Law: that the number of transistors (the on-off switches that enable binary computer calculations) on a microchip would double every 18 months. The increase in computer computational power since then has confirmed his insight. Today desktop computers can crunch more than 3 billion computations per second. This is more than seven-and-a-half million times what the Intel 4004 could handle. Such advances in computing power have fueled a sharp increase in computer applications and use. PCs have moved beyond word processing and spreadsheet analysis to help people work together. For example, design engineers in California use the Internet to test new ideas with marketers in New York. This cuts development time for new products in half. Sales representatives on the road can use laptops or wireless devices to log orders and provide customer service. New-generation computer systems even monitor themselves and send messages to service centers detailing problems when they arise. For example, General Electric uses these systems and the Internet to keep tabs on factory equipment thousands of miles away. A recent study concludes that information technology (IT) was a leading force behind the improved productivity growth during the second half of the 1990s and the early part of the first decade of the third millennium. Computers affect productivity through two channels: (1) efficiency gains in the production of computers and (2) greater computer use by industry.

THINK CRITICALLY

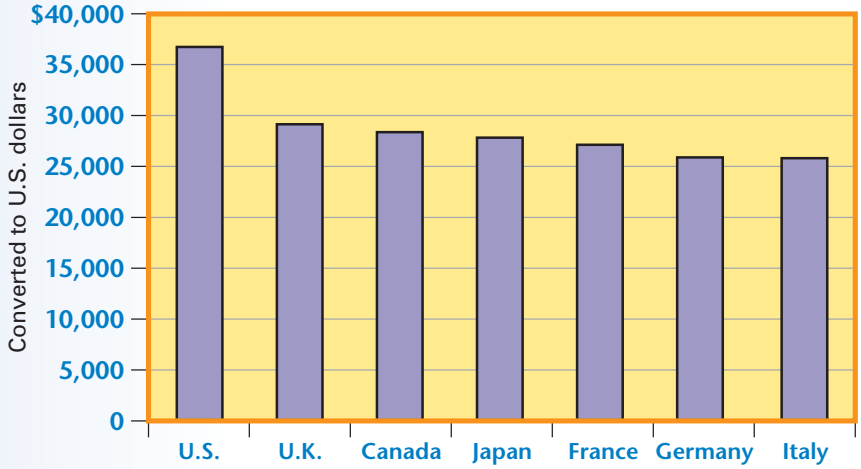
Since their introduction to the workplace, what effects have computers had on the quality of human capital in the United States? How has this influenced productivity?

Sources: Steve Makris, "Dual Core the New Faster Standard for Chips," *Edmonton Journal*, January 21, 2006; Hal Varian, "Information Technology May Cure Low Productivity," *New York Times,* February 12, 2004; Leila Jason, "Software Lets Managers Watch Their Business from a Distance," *Wall Street Journal,* August 30, 2001.

U.S. GDP Per Capita in 2004 as Compared to Other Major Economies — **Figure 12.6**

The U.S. per capita income in 2004 stood 26 percent above that of second-ranked United Kingdom and 42 percent above that of Italy, ranked last among these major economies.

Source: Based on estimates by the World Bank, which are adjusted across countries using the purchasing power of the local currency as of 2004.



Assessment 12.2

Key Concepts

1. Do you think your standard of living is better than that of your parents when they were your age? Explain your answer.
2. Why is providing education to all residents a difficult task for many developing countries?
3. What if by earning a high-school diploma you are able to produce 25 percent more each year than you could have produced without graduating from high school? How important would this extra production be to you, your family, and the economy in general if you work until you are 67 years old?
4. Identify a specific event or new technology that you think has increased labor productivity in the past five years. Explain how this increase has been accomplished.
5. Measures of output per capita do not consider production that takes place within households. In the past 50 years, a much larger share of U.S. citizens have worked outside the home. How has this affected output per capita?

Xtra! Study tools
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Graphing Exercise

6. An increase in the value of output per hour worked reflects a growth in labor productivity. The data in the table show the increase in the real output per hour worked in the years from 1992 through 2005. The year 1992 represents 100 percent. Values for years after 1992 show the percentage growth from 1992. For example, the value 101.6 for 1994 shows that 1.6 percent more was produced per hour worked in 1994 than in 1992. Use these data to construct a line graph that shows the change in output per hour worked for these years. Explain what this information shows about the economy.

Think Critically

7. **Science** Identify and describe a scientific advancement that has contributed to increases in labor productivity in this country or in other countries of the world.
8. **Literature** Identify and describe advances in communications technology that have changed the way books are written and published in recent years. If Shakespeare had lived today, how might his work have been different?

Real Output Per Hour Worked, 1992–2005

Year	Output	Year	Output	Year	Output
1992	100.0	1997	106.6	2002	123.3
1993	100.5	1998	109.5	2003	128.0
1994	101.6	1999	112.6	2004	132.3
1995	102.1	2000	115.6	2005	137.1
1996	104.9	2001	118.5		

12.3 Issues of Technological Change

Objectives

- Discuss the impact of research and development on the standard of living.
- Explain the relationship between technological change and employment levels.
- Describe industrial policy, and the arguments for and against its use.

Overview

A major contributor to productivity growth and a rising standard of living is an improvement in the quality of human and physical capital. Improvement of human capital results from better education and more job training. Improvement of physical capital springs from better technology. Some other issues of technological change include the role of research and development and the relationship between technological change and employment.

Key Terms

basic research

applied research

industrial policy

cluster

In the News

It's a Flat World After All

According to *New York Times* columnist Thomas Friedman, technology has created a "flat world." By this he means that technology allows workers around the world to compete for global knowledge work. Friedman coined this term during the dot-com era, when the world was "flattened" as fiber-optic cables and software applications allowed connected computers anywhere in the world to share work. For Friedman, the global fiber-optic network "has made us all neighbors." Now every nation's service industry can be outsourced to the lowest bidder. It enables U.S. tax returns to be computed in India, and CAT scans to be read in Australia. The addition of Palm Pilots, laptops, and wireless connections allow data to flow quickly from more and more locations around the world. In the flat world, technology creates more jobs not only in this country but around the world. American workers in the twenty-first century must compete not just with each other but with the world in education, skills, and salary. As Friedman recalls, his parent used to tell him, "Tom, finish your dinner—people in China are starving." Now he tells his daughters, "Girls, finish your homework—people in China are starving for your job."

THINK ABOUT IT

How do you think the United States should react as the world becomes "flattened"?

Sources: Thomas L. Friedman, "It's a Flat World, After All," *New York Times*, April 3, 2005; Warren Bass, "The Great Leveling," *Washington Post*, April 3, 2005.

Research and Development

Improvements in technology arise from scientific discovery, which is the product of research. Economists distinguish between basic research and applied research.

Basic and Applied Research

The search for knowledge without regard to how that knowledge will be used is called **basic research**. Basic research is a first step toward technological advancement. In terms of economic growth, however, scientific discoveries are meaningless until they are implemented, which requires applied research.

Applied research seeks to answer particular questions or to apply scientific discoveries to the development of specific products. Technological breakthroughs may or may not have commercial possibilities. Thus the payoff is less immediate with basic research than with applied research.

R&D Comparisons Across Countries

Technological change is the fruit of research and development (R&D). Investment in R&D reflects the economy's efforts to improve productivity through technological discoveries. One way to track R&D spending is to measure it relative to gross domestic product, or GDP. Figure 12.7 shows R&D spending as a share of GDP for the United States and the six other major economies for the 1980s and 1990s. Overall R&D spending in the United States averaged 2.7 percent of GDP in both the 1980s and the 1990s. During the 1990s, R&D as a share of GDP ranked the United States second among the major economies. It ranked slightly behind Japan, at 2.9 percent, but well ahead of last-place Italy, at only 1.1 percent.

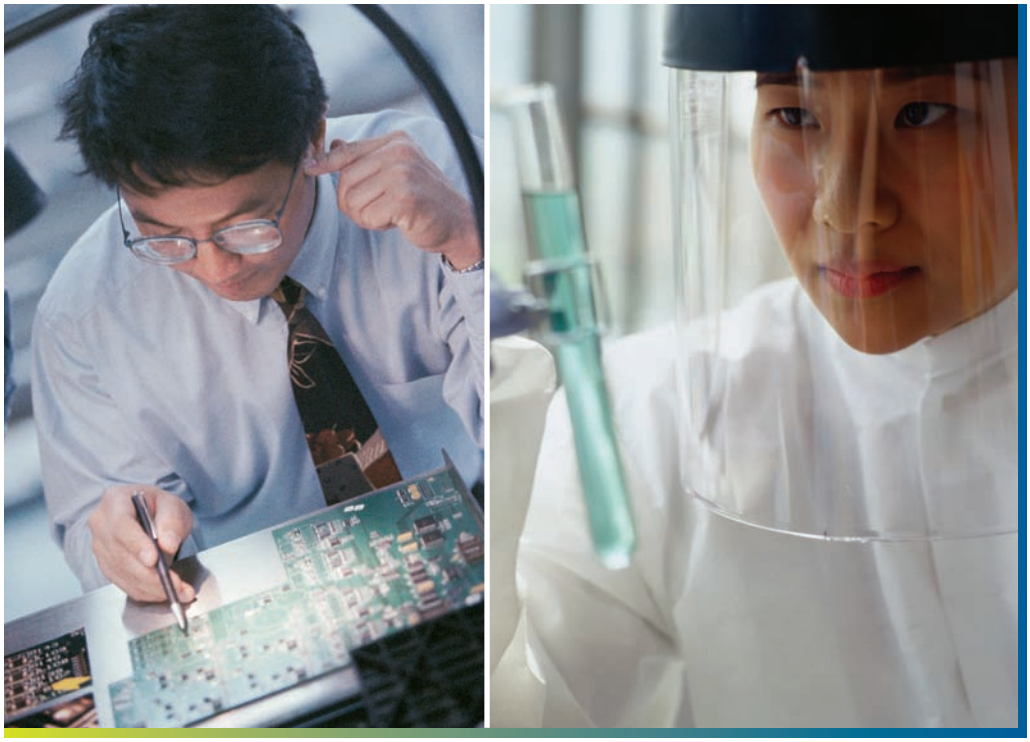
Bar segments in the chart distinguish between R&D by businesses and R&D by governments and nonprofit institutions. Business R&D is more likely for applied research and innovations. R&D spending by governments and nonprofits, such as universities, is more

basic research

The search for knowledge without regard to how that knowledge will be used; a first step toward technological advancement

applied research

Research that seeks answers to particular questions or applies scientific discoveries to develop specific products



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Which of these photos better illustrates basic research, and which better illustrates applied research? Justify your answers with evidence from the photos.

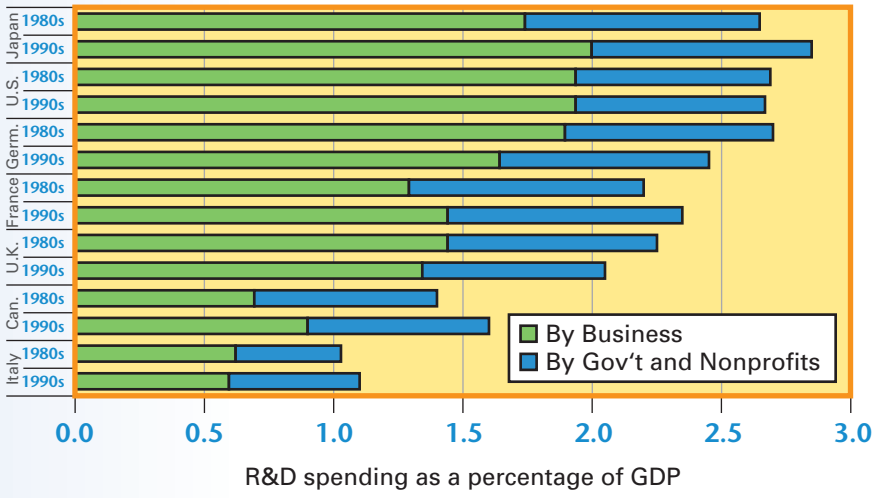
Main Idea

Growth: R&D Spending as a Percentage of GDP for Major Economies During the 1980s and 1990s

Figure 12.7

The United States devotes relatively more resources to R&D than most other advanced economies. Investment in R&D results in a higher standard of living for Americans.

Source: Based on figures from the Organization for Economic Cooperation and Development.



Ask the Xpert!

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Does technological change destroy jobs and lead to unemployment?

likely for basic research. This basic research may generate valuable ideas that ultimately have specific applications. For example, the Internet developed out of U.S. government research for a national defense communications system.

R&D by U.S. businesses averaged 1.9 percent of GDP in the 1990s, the same as in the 1980s. Three of the six other major countries experienced an increase in business R&D between the 1980s and 1990s, and three saw a decrease. Again, only Japan had higher business R&D than the United States had in the 1990s, at 2.0 percent of GDP. Italy had the lowest at 0.6 percent.

In short, the United States devotes relatively more resources to R&D than most other advanced economies. This results in a higher standard of living for Americans.

✓ CHECKPOINT

What is the impact of research and development on the standard of living?

Technological Change and Employment Levels

Technological change affects the economy in a variety of ways. Most of these are beneficial. However, technological change usually reduces the number of workers needed to produce a given amount of output. Consequently, some critics charge that new technology will throw people out of work and lead to lower employment levels.

Technological Change and Labor Productivity

Technological change may increase production and employment by making products more affordable. For example, the introduction of the assembly line made automobiles more affordable to the average household. This stimulated production and employment in the auto industry. The same happened with personal computers.

Technological change also may lead to workers losing their jobs—or being displaced—in some industries. Even in industries where some workers are dis-

placed by machines, those who keep their jobs are more productive, so they earn more. As long as human wants are unlimited, displaced workers usually will find jobs producing other goods and services demanded in a growing economy. Sometimes finding another job requires a worker to be retrained for a new occupation.

Technological Change and Employment Levels

There is no evidence that unemployment today is any greater than it was in 1870. Since then, however, worker productivity has increased more than 1,550 percent. The length of the average workweek has been cut nearly in half. Although technological change may displace some workers in the short run, long-run benefits include higher real incomes on average and more leisure—in short, a higher standard of living.

If technological change increases unemployment, then unemployment should be higher in economies where the latest technology has been introduced, such as in industrial countries. In fact, unemployment levels there are generally much lower than in developing countries, where the latest technology is seldom found. What's more, those in developing countries who are lucky enough to find work earn relatively little because they are not very productive.

Again, there is no question that technological change sometimes creates hardships in the short run, as workers scramble to adjust to a changing world. Some workers who lose jobs due to advances in technology may not find jobs that pay as well as the ones they lost. These lost jobs are one price of progress. Over time, however, most of these workers find other jobs, often in new industries created by technological change. In a typical year, the U.S. economy creates many more jobs than it eliminates.

✓CHECKPOINT

How does technological change affect employment levels?



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Human workers on some assembly lines have been replaced by automated systems. In a growing economy, what happens to workers who become displaced by technological change?

Industrial Policy

Because technological change is so important to a rising standard of living, some argue that governments should become more involved in shaping an economy's technological future. One concern is that technologies of the future will require huge sums to develop and implement. An individual firm cannot easily raise these sums and cannot risk failure. Another concern is that individual firms have less incentive to carry out basic research even though that research eventually has a high payoff for the economy as a whole. The fruits of basic research are not immediately embodied in something the firm can sell. Therefore, an individual firm may go bankrupt before applications are marketable.

industrial policy
The view that government—using taxes, subsidies, and regulations—should nurture the industries and technologies of the future, thereby giving domestic industries an advantage over foreign competition

Government Involvement

One possible solution to the problem of underinvestment is greater government involvement to promote investment in particular industries. **Industrial policy** is the idea that government—using taxes, subsidies, regulations, and coordination in the private sector—could help nurture the industries and technologies of the future. This would give U.S. industries an advantage over foreign competition.

The objective of U.S. industrial policy is to ensure adequate investment in research and to secure a leading global role for U.S. industry. One example of European industrial policy is Airbus Industrie, a four-nation aircraft maker. With an estimated $20 billion in government aid, the company has become Boeing's main rival. When Airbus seeks aircraft orders around the world, it can draw on government backing to promise special advantages, such as landing rights at key European airports and an easing of regulatory constraints. U.S. producers do not get such government backing.

U.S. industrial policy over the years was aimed at creating the world's most advanced military production capacity. With the demise of the Soviet Union, however, defense technologies became less important.

Span the Globe

Software Piracy Levels Make Real Piracy Look Like Shoplifting

Software piracy rates in India, China, and other Pacific Rim nations are legendary. According to a study released in December 2005, more than 53 percent of software titles used in Asian Pacific Rim countries are pirated copies. India leads the overall piracy pack with a 74 percent rate. Representatives of the Business Software Alliance (BSA) in Asia are quick to point out that the current situation not only robs the governments of needed tax revenues, but it also inhibits the growth of the IT sectors of their economies. Heeding the BSA's call for stricter enforcement, countries like Kuwait and Thailand have pledged enhanced efforts to counteract the piracy. The Philippines already has initiated an active campaign of intellectual property law enforcement by raiding eight companies accused of using software without a license. In addition, an American and his Filipino partner have been arrested for selling pirated software.

THINK CRITICALLY

What economic benefits should result from an effective campaign against software piracy?

Sources: "10% Cut in Piracy Could Add $135 Billion to Economies in the Asia-Pacific Region," *Financial Express,* December 15, 2005; "Software Group Cites Raids on Fake Products," Global News Wire, December 6, 2005.

Identifying Industry Clusters

Economists have long recognized that firms in particular industries gain a performance advantage by forming a **cluster**. That is, they locate in a region already thick with firms in that same industry or in related industries. Examples of industry clusters include Hollywood movies, Broadway theaters, Wall Street finances, Silicon Valley software, and Orlando theme parks.

Clusters aid communication and promote healthy competition among cluster members. The flow of information and cooperation between firms, as well as the competition among firms located together, stimulates regional innovation and promotes growth. By locating in a region that has similar businesses, a firm also can tap into an established customer base and into local markets for specialized labor and for other inputs.

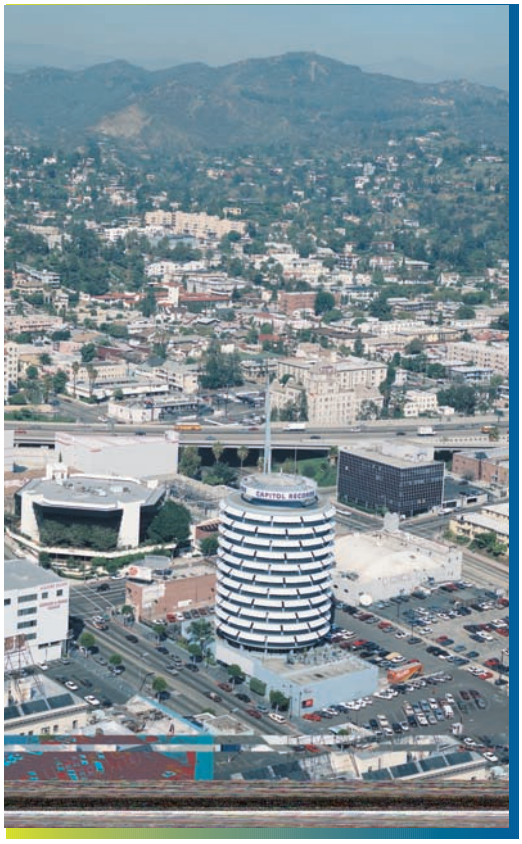
Some state and local governments are trying to identify the industries that should be promoted in their area. Governments try to attract firms in favored technologies by adopting favorable tax policies. They also may help to pay for the construction of support facilities and for training programs.

Pitfalls of Picking Technological Winners

Skeptics of industrial policy wonder whether the government should be trusted to identify emerging technologies and to pick the industry clusters that will lead the way. Critics of industrial policy say that markets allocate scarce resources better than governments do. For example, in the early 1980s, the U.S. government spent $1 billion to help military contractors develop a high-speed computer circuit. However, Intel, a company that received no federal support, actually was the first to develop the circuit.

Japan has had the most aggressive policy for regulating and supporting favored industries. Its approach includes discouraging competition in the industry and encouraging joint research. Those Japanese industries subject to the most regulation and support, such as chemicals and aircraft manufacturing, simply became uncompetitive in the world market. Meanwhile, the Japanese industries that had received little government backing, such as automobiles, cameras, and video games, turned out to be dynamic, innovative world competitors.

There also is concern that the government aid and the competitive advantages would be awarded based on political connections rather than on the promise of the technologies. Most economists would prefer to let private firms bet their own money on the important technologies of the future.



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The business of making movies is carried out primarily in Hollywood, California. What are the careers associated with the movie business? Why would people working in these fields benefit from living in or near Hollywood?

TeamWork

In small groups, brainstorm to identify any business clusters in your region. Then discuss the effects you think the clusters have on economic growth in the region.

cluster

Firms in the same industry or in related industries that group together in a region, such as Wall Street, Hollywood, or Silicon Valley

✓ CHECKPOINT

What is industrial policy, and what are the arguments for and against its use?

NETBookmark

The Bureau of Labor Statistics compiles international data on manufacturing productivity. Access this information through thomsonedu.com/school/econxtra. For the most recent period, which nations have enjoyed the most rapid growth in manufacturing productivity? Which nations have experienced the slowest growth?

thomsonedu.com/school/econxtra

Assessment 12.3

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Key Concepts

1. Which of the following types of research would have a more immediate impact on our nation's productivity: research into new types of genetically engineered plants or research about how genes control the development of fish embryos? Explain your choice.
2. A good deal of R&D in the United States and other countries is devoted to creating new types of consumer products such as shampoo, dish soap, or frozen pizza. Do you think this type of R&D adds significantly to our nation's productivity? Explain your answer.
3. There are many fewer manufacturing jobs in the U.S. economy today than there were in the past. Many people who once held manufacturing jobs have not been able to find new jobs that allow them to earn as much as they did in the past. Do you think government should provide such workers with special benefits? Why or why not?
4. Do you think that government-supported student aid for college students is similar to industrial policy in any way? Explain your answer.

Graphing Exercise

Retail Spending on Computer Equipment (in millions of 2000 dollars)

Year	Spending	Year	Spending
2000	$7,243	2003	$4,414
2001	$6,129	2004	$4,847
2002	$4,354		

Source: *Statistical Abstract of the United States,* 2006, pp. 481, 735.

5. Ownership of computer technology in American households has become almost universal in recent years. Although most families invest in new computer systems every few years, data in the table shows that the amount invested has actually declined in some recent years. Use the data to construct a line graph of the amount spent by individuals on new computer technology. How can you explain the decline in spending your graph shows?

Think Critically

6. **Government** In 1981, Congress passed a law that allowed businesses to deduct 10 percent of the cost of investments they made from their federal income taxes. A firm that purchased a $1 million machine could subtract $100,000 from its federal taxes. This law expired in 1986. Some people think a similar law should be passed today. Would you support such a law? Why or why not?
7. **Science** The federal government has provided many billions of dollars to the National Science Foundation (NSF) to support scientific research and development. Although some of the discoveries made by researchers supported by NSF grants have been of great value to our economy, others have not. Do you think that using several billion dollars each year for NSF research is a good use of your tax payments? Explain your answer.

CONNECT TO HISTORY



Interchangeable Parts and the Assembly Line

First proposed for the gun industry, the idea of interchangeable parts depended on machinery and precise measurements to build parts that were exactly the same. This allowed lesser-skilled workers to use machines to construct identical parts that could be assembled quickly and easily. The result was that productivity increased and cost was reduced. The amount of work that skilled craftspeople did in half a day now could be completed in three-and-a-half minutes.

By the 1850s, meat packers in Cincinnati began to combine slaughtering and processing under one roof. Set up as "disassembly" lines, they were noted as models of efficiency. The hogs were killed with a sledgehammer. Their bodies were then hung from a hook and moved along a pulley through the slaughterhouse. Along the line they were bled, scalded, gutted, and cleaned. Finally the carcasses were dismembered in about 35 seconds by a team of butchers.

Ransom Olds was the first person to mass-produce automobiles. Before mass production, the cars remained stationary in the factory. The workers moved from chassis to chassis assembling parts. Other workers would bring the parts to the workers wherever they were needed. Olds manufactured the cars by bringing all the material, including both the chassis and the parts, to the workers, who remained in one place. Henry Ford used the same process. Frames were arranged in a line in the plant, and teams of assemblers moved down the line performing one assembly operation. Parts already delivered to each station were ready for installation when the assemblers arrived. Following a suggestion by scientific management expert Clarence Avery, Ford installed conveyer belts to deliver the parts.

In 1913, Ford adopted the moving assembly line to automobile manufacturing in his Highland Park plant. Assembly time dropped from 17 hours to six. Workers were more productive, and the cost of the automobile fell—making it affordable to most Americans. Ford was able to give his unskilled workers wages that previously had been available only to skilled workers. In 1914, Ford was selling cars at $440. By 1916 the price had dropped to $345. Following World War I, the Model T roadster was priced at $260.



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THINK CRITICALLY

Look at your own life and home and determine the things that make your life more productive, such as computers, telephones, dishwashers, etc. Ask your parents, grandparents, or both to estimate the time they spent on household tasks when they were young, and compare it to the time you spend doing them today. What is the effect on everyday life? Write your findings down, and be prepared to compare them with what your classmates have found.

12 Chapter Assessment

Summary

12.1 The PPF, Economic Growth, and Productivity

a Economic growth is the primary way to reduce poverty and raise living standards. When a greater share of a nation's resources is allocated to the production of capital goods, there will be higher rates of economic growth. When this is graphed on a production possibilities frontier, the frontier will shift out over time.

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b *Productivity* measures how well resources are employed to create goods and services. The more efficiently resources are used, the higher a nation's *standard of living* is likely to be. Measures of productivity include *labor productivity,* capital productivity, and land productivity. Labor productivity can be enhanced through investments in *human capital* and in *physical capital.*

c Investments in *physical capital* can take the form of *capital deepening,* which involves adding more or better physical capital to production. Investment in physical capital also may involve the creation and use of new types of capital. Capital embodies the fruits of technological breakthroughs and serves as the primary engine for economic growth.

12.2 Living Standards and Labor Productivity Growth

a The single most important determinant of a nation's standard of living is the productivity of its resources. There are great differences in the standards of living among nations. *Developing countries* have a lower standard of living than *industrial market countries* because they have less human and physical capital.

b The quality of a nation's labor is an important source of productivity. Countries with the most advanced educational systems also are those that were first to develop. Over the past 135 years, the productivity has grown at an average rate of just over 2 percent per year in the United States. Small differences in productivity growth can cause huge differences in an economy's ability to produce over time.

c The best measure of an economy's standard of living is its output per capita. There has been an upward trend in this measure of productivity in the United States that has been interrupted by recessions in our economy. Output per capita in the United States is greater than that in most other nations, whether they are industrial market economies or developing economies.

12.3 Issues of Technological Change

a Improvements in technology arise from scientific discovery, which is the product of research that may either be basic or applied. *Basic research* investigates general fields of knowledge without regard for its marketability. *Applied research* seeks to answer particular questions that will assist in the production of specific products. As a greater share of a nation's resources are devoted to research and development, that nation should enjoy a greater increase in its productivity.

b Technological improvements that are brought about through research lead to increases in *labor productivity.* Workers who are trained to use new technologies are able to produce goods and services that have greater value. New technologies, however, can cause some workers who lack needed skills to become unemployed.

c Some nations have created and implemented *industrial policies* that are intended to shape their economies' futures. These nations use taxes, subsidies, and regulations to coordinate business activity in their private sectors to nurture industries and technologies of the future. This type of government policy has been used in a limited way in the United States. It has been much more common in Europe and Japan. Although industrial policies have assisted some types of production, they also have resulted in allocating resources to industries that could not use them efficiently. Most major technological breakthroughs came from industries that did not have government support.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The machines, buildings, roads, airports, communications networks, and other manufactured creations used to produce goods and services

_____ **2.** An economy's level of economic prosperity

_____ **3.** Firms in the same industry or in related industries that group together in a region

_____ **4.** The advanced market economies that include Western Europe, North America, Australia, New Zealand, and Japan

_____ **5.** Output per unit of labor

_____ **6.** The accumulated knowledge, skill, and experience of the labor force

_____ **7.** Countries with a lower standard of living because they have relatively little human and physical capital

_____ **8.** The search for knowledge without regard to how that knowledge will be used

_____ **9.** The ratio of output to a specific measure of input

_____ **10.** Research that seeks answers to particular questions or applies scientific discoveries to develop specific products

_____ **11.** The view that government—using taxes, subsidies and regulations—should nurture the industries and technologies of the future, thereby giving domestic industries an advantage over foreign competition

_____ **12.** The formal and informal institutions—such as laws, customs, and conventions—that provide production incentives and promote economic activity

a. applied research
b. basic research
c. capital deepening
d. cluster
e. developing countries
f. Group of Seven (G-7)
g. human capital
h. industrial market countries
i. industrial policy
j. labor productivity
k. physical capital
l. productivity
m. rules of the game
n. standard of living

Review Economic Concepts

13. True or False *Capital deepening* involves adding more or better physical capital to production.

14. __?__ measures how efficiently resources are employed to create goods and services.

15. True or False The more of a nation's resources that are allocated to the production of capital goods, the greater that nation's rate of economic growth will be.

16. __?__ takes place when there is an increase in the quantity or quality of capital per worker.

17. Which of the following will shift a nation's production possibilities frontier outward over time?

a. switching production away from capital goods

b. an increase in resources that are devoted to Social Security benefits

c. switching production away from consumer goods towards capital goods

d. an increase in resources that are devoted to employee salaries

18. Which of the following is an example of a change in the *rules of the game* that should increase a nation's productivity?
    a. Farmers are given a tax deduction when they buy new farm equipment.
    b. Lunches are provided free to students at an elementary school.
    c. Taxes on imported automobiles are increased.
    d. Welfare payments are increased for the nation's poor.

19. *Labor productivity* in most __?__ countries is very low, so most of their residents barely subsist.

20. The single most important determinant of a nation's *standard of living* is the
    a. productivity of its resources.
    b. size of its population.
    c. quality of its natural resources.
    d. nature of its government.

21. Some nations have created and implemented __?__ that are intended to nurture the industries and technologies of the future.

22. __?__ investigates general fields of knowledge but has no direct application to production.

23. Which of the following is regarded as the best measure of a nation's *standard of living*?
    a. total output
    b. output per capita
    c. spending on research and development
    d. spending on capital goods

24. __?__ seeks to answer particular questions or to use scientific discoveries to develop specific products.

25. **True or False** Technological advances will benefit all people equally.

26. Which of the following is not a common argument applied against the use of *industrial policy*?
    a. Industrial policy may result in investments that do not add to productivity.
    b. Industrial policy may give politicians too much control over the economy.
    c. Industrial policy may cause businesses to become uncompetitive in international trade.
    d. Industrial policy may prevent businesses from investing in new technologies.

27. **True or False** Productivity in the United States has increased at a constant rate of 2.1 percent per year over the past century.

28. Although technological improvements can lead to increased *labor productivity*, they also
    a. often reduce the quality of production.
    b. can cause some workers who lack needed skills to become unemployed.
    c. can weaken a nation's ability to compete in the global economy.
    d. may lower a nation's average standard of living.

Apply Economic Concepts

29. **Calculating Labor Productivity** The ABC Bowling Pin Company employs 20 workers who all work 40 hours per week, 50 weeks per year. Last year ABC produced 480,000 bowling pins that were sold for $2.50 each. What was the average hourly value of each ABC worker's production?

30. **Graphing Land Productivity** The amount of corn that Sara is able to grow on her farm depends on many things, including the amount of fertilizer she adds to the soil. She has studied her production over many years and has listed her findings in the table. Use these data to construct a bar graph that relates the land

productivity per acre of Sara's farm to the amount of fertilizer she applies. Why does production per acre decrease when she applies more than 5 tons of fertilizer per 100 acres?

Fertilizer Use and Corn Production Per Acre

Tons of Fertilizer Applied Per 100 Acres	Bushels of Corn Produced Per Acre
0	100
1	130
2	160
3	185
4	200
5	210
6	200

31. **Comparing Growth Rates in Different Nations** Suppose that two nations currently have exactly the same GDP this year. Country A allocates 10 percent of its resources to producing capital goods, while country B devotes only 6 percent of its resources to this type of production. As a result, country A's production grows at a rate of 2.5 percent per year while country B's rate of growth is only 1.8 percent per year. After five more years, how much larger will country A's GDP be than country B's? Make the amount of production in the first year equal to 100 in both countries.

32. **Sharpen Your Skills: Categorizing Information** Identify which of the following activities would add to human capital, which would add to physical capital, and which would add to neither type of capital.
    - Ted buys a new bicycle so he can deliver more newspapers in his neighborhood.
    - Shakir buys a new pizza oven for her restaurant.
    - Tyekeesha buys a take-out pizza on her way home from work.
    - Carmen buys a calculator to help her keep records for her pet shop.
    - Martin reads a book that teaches him how to repair his lawn mower.
    - Tanya completes a class in automotive repair at a community college.



33. Access **EconData Online** through thomsonedu.com/school/econxtra. Read the article entitled "What Is Labor Productivity?". Then click on "Diagrams/Data" and examine the line graph entitled "Labor Productivity and the Consumer Price Index." Judging from the graph, describe the relationship between production and inflation. Explain why you think this type of relationship exists.

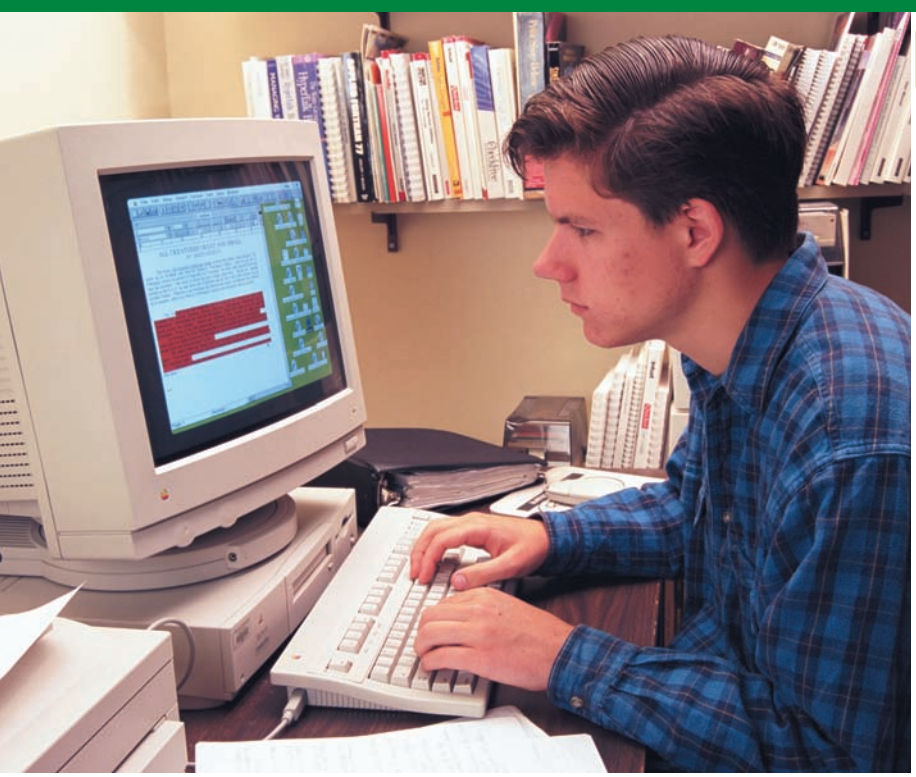
13 Economic Challenges

13.1 Unemployment

13.2 Inflation

13.3 Economic Instability

13.4 Poverty



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CONSIDER

Would a high school senior who is not working be considered unemployed?

What type of unemployment might be a healthy sign for the economy?

What's so bad about inflation?

What's stagflation?

Why don't some families benefit from a strong economy?

How might government transfers change work incentives?

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13.1 Unemployment

Objectives

- Distinguish among four types of unemployment.
- Discuss the unemployment rate, and describe how it differs over time and across groups.
- Explain who is eligible for unemployment benefits in the United States.

Overview

"They scampered about looking for work. . . . They swarmed on the highways. The movement changed them. The highways, the camps along the road, the fear of hunger and the hunger itself, changed them. The children without dinner changed them, the endless moving changed them." There is no question, as John Steinbeck wrote in *The Grapes of Wrath,* that a long stretch of unemployment deeply affects the individual and the family. Unemployment also imposes costs on the economy. When unemployment is high, the economy will not achieve its potential. Not all unemployment harms the economy, however. Even in a healthy economy, some of the unemployment reflects the voluntary choices of workers and employers seeking the best fit.

Key Terms

full employment

underemployment

labor force

unemployment rate

labor force participation rate

unemployment benefits

In the News

Long-Term Joblessness

After the end of the recessions of the 1970s and early 1980s, the long-term unemployment rate began dropping within seven or eight months. After the end of the recessions of 1990–1991 and 2001, however, the long-term unemployment rate took 19 to 22 months to begin dropping. Defined as those who have been unemployed for more than six months, long-term unemployment hits most heavily middle-aged women and educated white-collar workers. The rise in long-term unemployment is driven by several factors. First, companies are slower to replace workers until employers are convinced the economy will remain strong. Second, increased productivity has allowed companies to try to do more with fewer workers. Third, older unemployed workers find that companies are not willing to match their former salaries. Fourth, employers are reluctant to hire job seekers who are overqualified because they fear such workers will leave for a better job at the first opportunity. Finally, many older unemployed workers find that their skills no longer match the skills demanded in the job market.

THINK ABOUT IT

Should unemployment benefits be extended beyond six months for older workers who are undergoing retraining?

Sources: Louis Uchitelle, "The New Profile of the Long-Term Unemployed," *New York Times,* May 24, 2005; "A Glance at Long-Term Unemployment in Recent Recessions," *Issues in Labor Statistics,* January 2006, U.S. Labor Department, U.S. Bureau of Labor Statistics.

Types of Unemployment

Think about all the ways people can become unemployed. They may quit or be fired from their job. They may be looking for a first job, or they may be reentering the labor force after an absence. A look at the reasons behind unemployment in 2005 indicates that 48 percent of the unemployed lost their previous jobs, 12 percent quit their previous jobs, 9 percent were entering the labor market for the first time, and 31 percent were reentering the market.

The help-wanted section of a big-city newspaper may list thousands of job openings, from accountants to yoga instructors. Why are people unemployed when so many jobs are available? To understand the answer to this question, take a look at the four types of unemployment: frictional, structural, seasonal, and cyclical.

Ask the Xpert!

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What are the principal types of unemployment?

Frictional Unemployment

Just as employers do not always hire the first applicant who comes through the door, job seekers do not always accept their first offer. Both employers and job seekers need time to explore the job market. Employers need time to learn about the talent available, and job seekers need time to learn about employment opportunities. The time required to bring together labor suppliers and labor demanders creates *frictional unemployment*. Frictional unemployment does not usually last long and results in a better match-up between workers and jobs. The entire economy becomes more efficient. A marketing major who graduated from college in June and is taking the summer to look for the perfect sales position is frictionally unemployed. A high school teacher who quits his job at the end of the school year to look for a job in another field is frictionally unemployed.

Structural Unemployment

In a dynamic economy, the demand for some labor skills declines while the demand for other labor skills increases. For example, automatic teller machines have put many bank tellers out of work. At the same time, those with certain computer skills are in greater demand. *Structural unemployment* results when job seekers do not have the skills demanded. Structural unemployment poses more of a problem than frictional unemployment because the unemployed may need to retrain to develop the required skills.

Seasonal Unemployment

Unemployment caused by seasonal changes in labor demand during the year is called *seasonal unemployment*. During cold winter months, for example, demand for farm hands, lifeguards, and construction workers shrinks. Workers in these seasonal jobs know they will probably be unemployed in the off-season. Some may have even chosen a seasonal occupation to complement their lifestyle or academic schedule.

Cyclical Unemployment

As output declines during recessions, firms reduce their demand for inputs, including labor. *Cyclical unemployment* is the increase in unemployment caused by the recession phase of the business cycle. Cyclical unemployment increases during recessions and decreases during expansions.

Full Employment

In a dynamic, growing economy, changes in consumer demand and in technology continually affect the market for particular types of labor. Thus, even in a healthy, growing economy, there will be some frictional, structural, and seasonal unemployment. The economy is said to be at **full employment** if there is no cyclical unemployment.

full employment
Occurs when there is no cyclical unemployment; relatively low unemployment

When economists talk about "full employment," they do not mean zero unemployment but relatively low unemployment, say between 4 and 5 percent. Even when the economy is at full employment, there will be some frictional, structural, and seasonal unemployment.

Problems with Official Unemployment Estimates

Official unemployment statistics have limitations. For example, some people may have become so discouraged by a long, unsuccessful job search that they have given up looking for work. These *discouraged workers* have, in effect, dropped out of the labor force, so they are not counted as unemployed. Because the official unemployment rate ignores discouraged workers, it may underestimate unemployment in the economy.

Official employment figures also ignore the problem of **underemployment**. This arises because people are counted as employed even if they can find only part-time jobs or are overqualified for their job. For example, if someone with a Ph.D. in English Literature can find work only as a bookstore clerk, that individual would be considered underemployed. Counting the underemployed as employed tends to understate the true amount of unemployment.

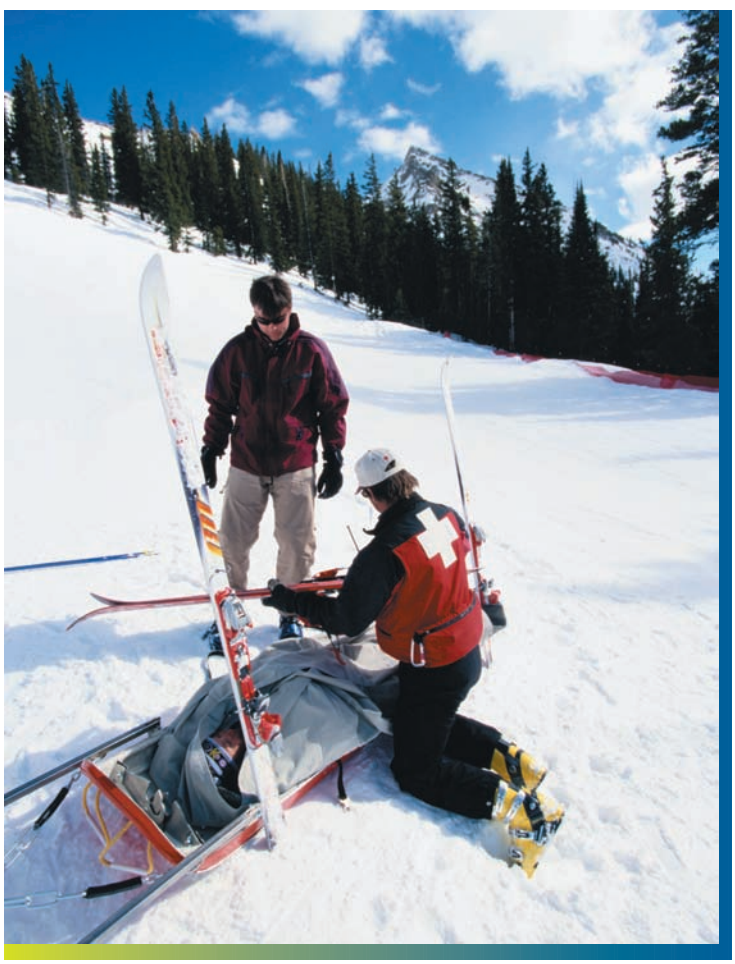
On the other hand, there are reasons why unemployment figures may overstate the true extent of employment. For example, to qualify for some government transfer programs, beneficiaries must look for work. If some of these

NET Bookmark

The Bureau of Labor Statistics provides data on labor market conditions, including unemployment rates, labor force estimates, and earnings data. Access the web site through thomsonedu.com/school/econxtra. What is the unemployment rate for the most recent month listed in the table? What is the trend in the unemployment rate?

thomsonedu.com/school/econxtra

underemployment
Workers are overqualified for their jobs or work fewer hours than they would prefer



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What type of unemployment results for members of the ski patrol when changing weather patterns no longer permit skiing in an area?

people do not in fact want to find a job, then counting them as unemployed overstates the true unemployment rate. Also, people working in the underground economy may not readily admit they have a job if their intent is to evade taxes or skirt the law. Many of those in the underground economy end up being counted as unemployed even though they are working.

✓ CHECKPOINT

What are the four types of unemployment?

The Cost and Measure of Unemployment

labor force
Those in the adult population who are either working or looking for work

unemployment rate
The number of people without jobs who are looking for work divided by the number in the labor force

The most obvious cost of unemployment is the loss of a steady paycheck for the unemployed individual and the family. However, many who lose their jobs often suffer a loss of self-esteem. No matter how much people complain about their jobs, they rely on them not only for income but also for part of their personal identity. A long stretch of unemployment can have a lasting effect on both self-esteem and economic welfare.

In addition to these personal costs, unemployment imposes a cost on the economy as a whole because fewer goods and services are produced. When the economy does not generate enough jobs to employ all who seek work, that unemployed labor is lost forever. *This lost output together with the economic and psychological damage to unemployed workers and their families represents the true cost of unemployment.*

Unemployment Rate

The most widely reported measure of the nation's economic health is the unemployment rate. To see what the unemployment rate measures, you need to understand its components. A measurement of unemployment begins with the U.S. *noninstitutional adult population,* which consists of all those 16 years of age and older, except people in the military, in prison, or in mental hospitals. When the expression "adult population" is referred to in this section, it means the noninstitutional adult population.

The **labor force** consists of those in the adult population who are either working or looking for work. *Those with no job who are looking for work are counted as unemployed.* Thus, a high school student at least 16 years of age who wants a job but can't find one would be counted as unemployed. The **unemployment rate** equals the number unemployed—that is, people without jobs who are looking for work—divided by the number in the labor force.

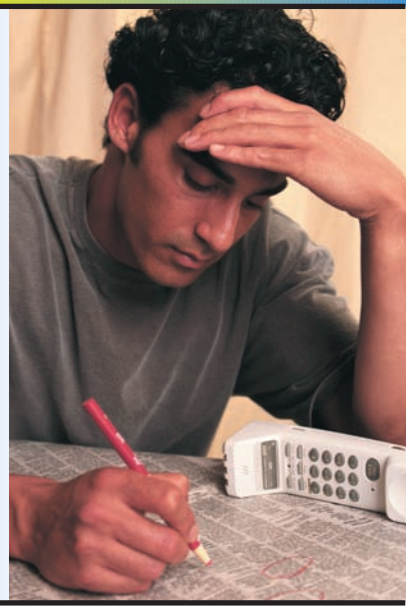
$$\text{Unemployment rate} = \frac{\text{Number unemployed}}{\text{Number in the labor force}}$$

Only a fraction of those not working are considered unemployed. People may not be working for all kinds of reasons. They may be full-time students, retirees, homemakers, or disabled. Or they may simply not want to work.

Main Idea

Unemployment

What are the costs of unemployment for unemployed individuals? What are some other costs associated with unemployment?



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Labor Force Participation Rate

Employment measures are illustrated in Figure 13.1. In this figure, circles represent the various groups, and the millions of people in each category and subcategory are shown in parentheses. The circle on the left depicts the entire U.S. labor force, including both those employed and those looking for work. The circle on the right represents members of the adult population who are not working. Together, these two circles add up to the adult population.

The overlapping area identifies *unemployed* workers—that is, people in the labor force who are not working but are looking for work. Using the fomula given above, in this example 7.2 million people were unemployed in a labor force of 151.5 million. This resulted in a U.S. unemployment rate of 4.8 percent.

The productive capability of any economy depends in part on the proportion of adults in the labor force, measured as the *labor force participation rate.* In Figure 13.1, the U.S. adult population equals those in the labor force (151.5 million) plus those not in the labor force (77.4 million), for a total of 228.9 million. The **labor force participation rate** therefore equals the number in the labor force divided by the adult population. For July 2006, that was 151.5 million divided by 228.9 million, which equals 66.2 percent. So, on average, two out of three adults were in the labor force. The labor force participation rate increased from about 60 percent in 1970 to about 67 percent in 1990. Since then, it has changed little.

Investigate Your Local ECONOMY

Research to find the unemployment rates in your city and state. Compare these rates with the most current unemployment rate for the United States. If these rates differ, propose an explanation for why they differ.

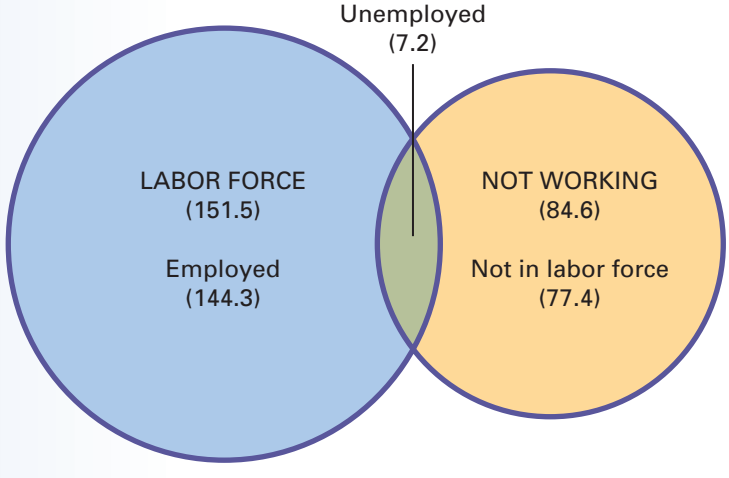
labor force participation rate

The number in the labor force divided by the adult population

Composition of Adult Population (in millions), July 2006 — **Figure 13.1**

The labor force consists of employed and unemployed people 16 years or older. Those not working consist of individuals not in the labor force and those unemployed. The adult population sums the employed, the unemployed, and people not in the labor force.

Source: U.S. Bureau of Labor Statistics.



Changes in the Unemployment Rate

Figure 13.2 shows the U.S. unemployment rate since 1900, with shading to indicate periods of recession or depression. As you can see, the rate increased during recessions and fell during expansions. Perhaps the most striking feature of the graph is the dramatic jump that occurred during the Great Depression of the 1930s, when the unemployment rate reached 25.2 percent.

Unemployment for Various Groups

The unemployment rate says nothing about who is unemployed or for how long. Even a low overall rate often hides wide differences in unemployment rates across age, race, gender, and geographic area. For example in July 2006, when the U.S. unemployment rate was 4.8 percent, the rate was 15.5 percent among teenagers, 9.5 percent among blacks, and 5.3 percent among Hispanics or Latino ethnicity. These reflect differences in job opportunities, work experience, education, skills, as well as discrimination.

Unemployment rates for some different groups appear in Figure 13.3. As you can see, rates are higher among blacks than among whites. Rates also are higher among teenagers than among those aged 20 and older. During recessions, the rates climbed for all groups. Rates peaked during the recession of 1982 and then trended down. After the recession of the early 1990s, unemployment rates continued downward, with the rate among blacks falling in 2000 to the lowest on record. Rates turned up again with the recession of 2001, and then declined after 2003.

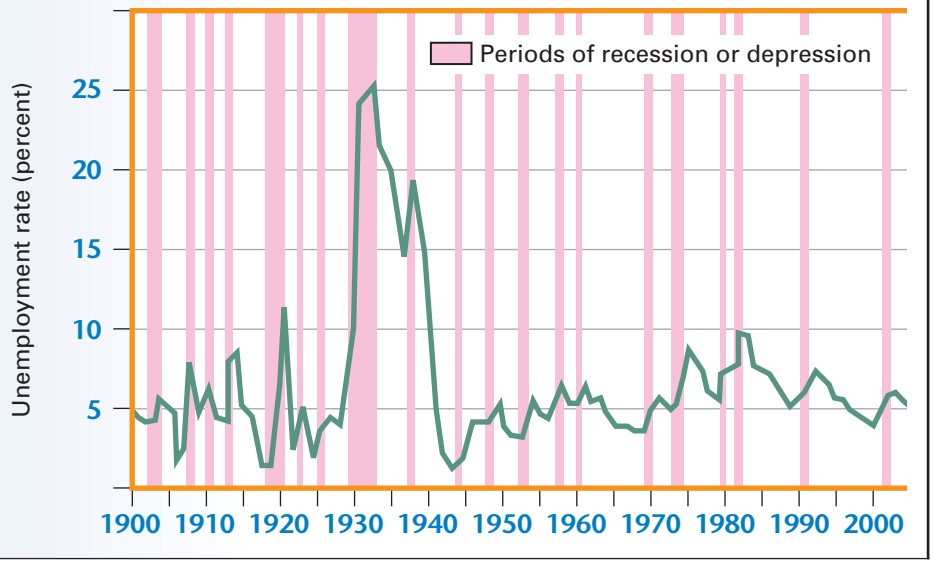
Why are unemployment rates among teenagers so much higher than among workers age 20 and older? Because young workers enter the job market with little training, take unskilled jobs, and are the first to be fired if the economy slows down. Young workers also move in and out of the job market more frequently during the year as they juggle school demands. Even those who have left school often shop around for jobs more than older workers do.

The U.S. unemployment rate also covers up much variation in rates across the country. For example, recent unem-

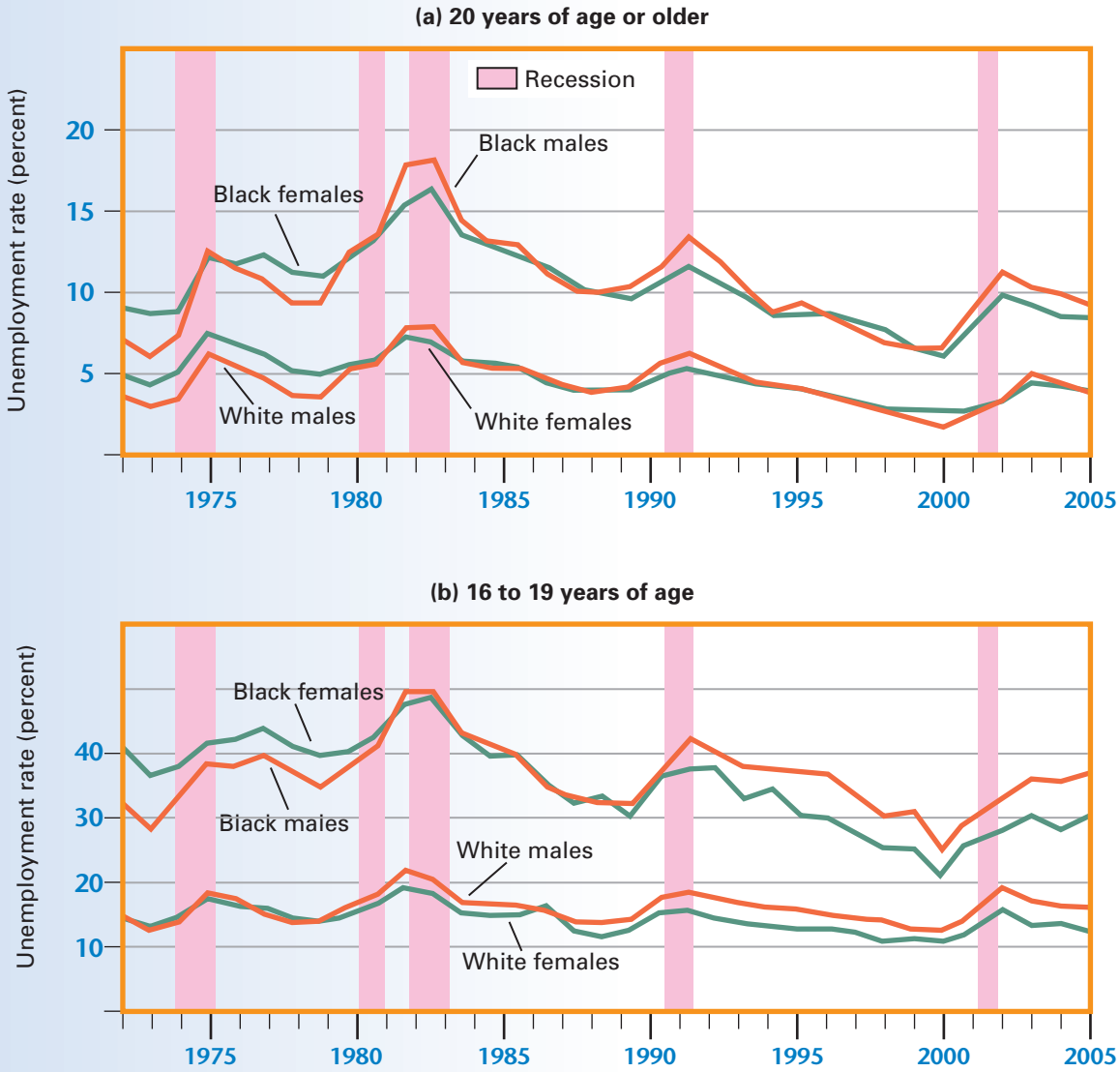
The U.S. Unemployment Rate Since 1900 — **Figure 13.2**

Since 1900, the unemployment rate has fluctuated widely, rising during recessions and falling during expansions. During the Great Depression of the 1930s, the rate rose as high as 25.2 percent.

Sources: U.S. Census Bureau, *Historical Statistics of the United States: Colonial Times to 1970* (Washington, D.C.: U.S. Government Printing Office, 1975); *Economic Report of the President,* February 2006; and U.S. Bureau of Labor Statistics.



Unemployment Among Various Groups Since 1972 | **Figure 13.3**



Unemployment affects different groups in different ways. The unemployment rate is higher for blacks than for whites and higher for teenagers than for workers 20 and older.

Sources: Based on figures found in *Economic Report of the President,* February 2006, Table B-43; and U.S. Bureau of Labor Statistics.

ployment rates in Alaska, Michigan, and Mississippi were more than double those in Florida, Hawaii, and Virginia.

✓ CHECKPOINT

What is the unemployment rate and how has it differed over time and across groups?

Unemployment Benefits

As noted earlier, unemployment often imposes both an economic and psychological hardship on the unemployed worker and the family. Today, a large proportion of households have two workers in the labor force, so if one becomes unemployed, another is likely to still have a job that may provide health insurance and other benefits. Having

more than one family member in the labor force cushions the economic shock of unemployment.

Unemployment Compensation

Workers who lose their jobs today often receive unemployment benefits. In response to the massive unemployment of the Great Depression, Congress passed the Social Security Act of 1935. This act provides unemployment insurance financed by a tax on employers. Workers who have lost their jobs and who meet certain qualifications can receive **unemployment benefits** for up to six months, provided they actively seek work.

unemployment benefits

Cash transfers to unemployed workers who lost their jobs, actively seek work, and meet other qualifications

During recessions, unemployment benefits often extend beyond six months in states with especially high unemployment. Insurance benefits go mainly to people who have lost jobs. Individuals just entering or reentering the labor force are not covered, nor are those who quit their last job or those fired for just cause, such as excessive absenteeism or theft. Because of these restrictions, fewer than half of all unemployed workers receive unemployment benefits.

Unemployment benefits averaged about $265 per week in 2005. This replaced on average about 40 percent of a person's take-home pay, with a higher share for those whose jobs paid less.



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What are the advantages of having more than one family member in the labor force?

Unemployment Benefits and Work Incentives

Because unemployment benefits reduce the opportunity cost of remaining unemployed, they also may reduce the incentive to find work. For example, what if you faced the choice of taking a job washing dishes that pays $200 per week or collecting $150 per week in unemployment benefits?

Evidence suggests that those who receive unemployment benefits tend to search less actively than those who don't. Those who receive benefits step up their job search as the end of benefits approaches.

Although unemployment benefits provide a safety net for the unemployed, they also may reduce the need to find work. They may increase the average length of unemployment and the unemployment rate as well.

On the plus side, unemployment benefits allow for a more careful job search, because the job seeker has some income and need not take the first job that comes along. As a result of a wider search, there is a better match between job skills and job requirements, and this promotes economic efficiency. In addition, unemployment compensation payments allow the unemployed to continue to spend. This spending reduces the likelihood that other workers will be laid off.

✓ CHECKPOINT

Who is eligible for unemployment benefits in the United States?

Assessment 13.1

Key Concepts

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1. How may people who keep their jobs be harmed by high levels of unemployment?
2. Are you currently a member of the labor force? Explain your answer.
3. Why do you think the government considers as unemployed only those who are without employment but are looking for work?
4. Do you know anyone who has chosen to change jobs? Why did this person make this choice? How long was he or she unemployed? Was this person satisfied with the job he or she eventually accepted? Do you think this person made a rational choice?
5. Unemployment compensation payments can make up for some of the income workers lose when they are laid off. However, such payments do not provide medical insurance coverage. How does this create an important incentive for a person who is out of work to seek new employment as quickly as possible?
6. How can unemployment compensation payments help workers who are not unemployed?

Graphing Exercise

7. In general, young people suffer from higher rates of unemployment than older people. Use data from this table to construct a double line graph that compares the rates of unemployment for people who are 16–19 years of age with the average for all members of the labor force. Identify and explain three possible reasons why young people have higher unemployment rates.

Unemployment Rates, 1985–2005

Year	Unemployment Rate for People 16–19	Unemployment Rate for Entire Labor Force
1985	18.6%	7.2%
1990	15.5%	5.6%
1995	17.3%	5.6%
2000	13.1%	4.0%
2005	16.1%	5.1%

Think Critically

8. **History** The Great Depression of the 1930s was the deepest and most well-known economic downturn in recent U.S. history. There have been many other recessions since 1776. Years in which these recessions occurred include 1837, 1873, 1893, and 1907. Investigate one of these events. What happened to employment in the recession you chose to study?
9. **Sociology** Look through a sociology textbook or on the Internet to find information about how society is affected by high rates of unemployment. You should investigate in particular its impact on families. Are there more divorces when unemployment is high? Why might this be true?

movers + shakers

Jeff Taylor *Founder, Monster.com*

Being a leader is part of Jeff Taylor's make-up. While attending the University of Massachusetts, he set his sights on becoming pledge master of the Pi Kappa Alpha fraternity. Not only did he achieve that goal, Taylor eventually became fraternity vice-president and then president. At the same time, he also managed the university's tour guide service. As advertising manager and later business manager for the University of Massachusetts paper, *The Collegian,* Taylor helped make the paper profitable after a 30-year history of operating in the red. To earn living expenses during college, Taylor came up with the idea to assemble and sell "freshmen survival kits," boxes of snacks intended to help freshmen survive exam week.

After graduating, Taylor earned an executive MBA from Harvard Business School. In 1989, he started his own advertising agency, Adion. The name, he explains, "stood for what we did, which was create ads, and for the particle of energy—ion—that represented the energy we put into creating ads." While running his ad agency, Taylor became intrigued by the then-new concept of computer bulletin boards. "So I started learning everything I could about them. At the same time, the World Wide Web was being invented." Taylor combined his interests in advertising and the new communications technologies, and what resulted was Monster.com. A year after starting the company he sold it, but he remained there until August 2005.



ALEX WONG/GETTY IMAGES

At its inception, Monster.com posted 200 job openings at 20 different companies. Today, the Monster web site typically posts more than 400,000 job openings and is visited by more than 24 million job seekers each month. It is the largest careers web site in the world. In 2005, Monster.com had 4,600 employees in 25 countries and annual sales of nearly $1 billion, a 16.7 percent growth over the previous year.

Monster.com has special services that enable visitors to develop one or more online resumes that can be stored for free. Visitors also can apply online for jobs, all at no charge. For a membership fee, users can utilize software components that will continuously search for their self-described "ideal" job.

While at the helm of Monster.com, Taylor was not your typical CEO. He equipped the company's headquarters, located in Maynard, Massachusetts, with pool, ping-pong, and foosball tables. "We encourage our employees to be excellent foosball players as long as they have some other core competency, like doing their job well." He practiced what he preached. "I can hold my own during employee foosball tournaments."

Taylor's leadership abilities have made him an attractive employer. "I think a big part of being a leader is learning how to identify talent. The people you surround yourself with are going to directly influence your ability to build a successful organization, so you must be very careful and selective of the people you hire." He adds, "Being able to recognize good ideas from okay ideas is also a key aspect of leadership." Taylor is a fan of the saying that the shortest distance between two points is a good idea. A popular speaker, Taylor likes to tell his audience, "If you have good ideas, pursue them!" His other favorite expression—one that promotes his belief in hard work—is, "you can only coast one way, and that is downhill."

In August 2005, at age 44, Taylor left Monster.com to develop a new Web "lifestyle" company called Eons Inc., targeting the 50 and older market.

SOURCE READING

What do you think the term "Web 'lifestyle' company" means? Surf the Internet with "Eons Inc." as your search term to help answer this question.

ENTREPRENEURS IN ACTION

In small groups, discuss the relationship between the unemployment rate and the demand for the services of Monster.com.

Sources: www.pka.com/wjeff.html; www.monster.com; www.umassalumni.com/special_events/Bateman/taylor_bio.htm

13.2 Inflation

Objectives

- Describe the types of inflation, and identify two sources of inflation.
- Identify the problems that unexpected inflation creates.

Overview

As a result of incredibly high inflation, Brazilian prices in 1994 were 3.6 million times higher than in 1988. To put this in perspective, with such inflation in the United States, the price of gasoline would have climbed from $1.25 a gallon in 1988 to $4.5 million a gallon in 1994. A pair of jeans that sold for $25 in 1988 would have cost $90 million in 1994. With such wild inflation, Brazilians had difficulty keeping track of prices. People couldn't carry enough money to make even small purchases. Inflation, particularly high inflation, makes market exchange much more difficult.

Key Terms

inflation

demand-pull inflation

cost-push inflation

nominal interest rate

real interest rate

In the News

Who's the Box Office Champion?

Almost every year, the total amount of movie box office receipts increases. The 1997 movie *Titanic* grossed more than $600 million in the United States—more than any movie ever. However, in 1997 the average ticket price for a movie was around $5. When adjusted for inflation, *Titanic* is only the seventh highest-grossing film of all time. The film that made the most money in inflation-adjusted dollars is the 1939 epic *Gone with the Wind.* At the time it came out, the average price of a movie ticket was only 25 cents. When revenues are adjusted for inflation, *Gone with the Wind* earned the equivalent of more than $1.2 billion. About 206 million people saw the movie when it came out compared to 123 million who saw *Titanic.* This trend is reflected in movie attendance records more generally. Even though films today gross much more than films of the 1930s, more people went to the movies back then. Today about 27 million Americans see a movie in an average week. In the 1930s, about 90 million people went to the movies in an average week. Because of this difference, it is very unlikely that even the most popular modern film will ever surpass *Gone with the Wind,* or even the runner up, *Star Wars* (1977), which, in inflation-adjusted dollars, grossed more than $1 billion in the United States.

THINK ABOUT IT

Why is it necessary to adjust for inflation when comparing economic situations from different eras, such as movie box office receipts?

Sources: "All Time Movie Box Office Moneymakers (adjusted for inflation)," MovieOrgins.com; "All Time Top 191 Movies by U.S. Theatre Attendance," home earthlink.net/~mrob/pub/movies/topadj.html; "The South Rises Again," *Economist,* March 7, 1998, p. 89.

Inflation Basics

inflation
An increase in the economy's price level

demand-pull inflation
Inflation resulting from a rightward shift of the aggregate demand curve; greater demand pulls up the price level.

You were introduced to the concept of inflation earlier in this book. **Inflation** is an increase in the economy's price level. Inflation reduces the value of money and is usually measured on an annual basis. The *annual inflation rate* is the percentage increase in the price level from one year to the next.

Types of Inflation

Extremely high inflation, such as the experience in Brazil as discussed in the chapter overview on page 391, is called *hyperinflation*. A reduction in the rate of inflation is called *disinflation,* as occurred in the United States during the 1980s. A decrease in the price level is called *deflation,* as occurred in the United States during the Great Depression and most recently in Japan, Hong Kong, and Taiwan.

Two Sources of Inflation

Inflation is an increase in the economy's price level resulting from an increase in aggregate demand or a decrease in aggregate supply. Panel (a) of Figure 13.4 shows an increase in aggregate demand that raises the price level from P to P'. Inflation resulting from increases in aggregate demand is often called **demand-pull inflation**. In such cases, a rightward shift of the aggregate demand curve *pulls up* the price level.

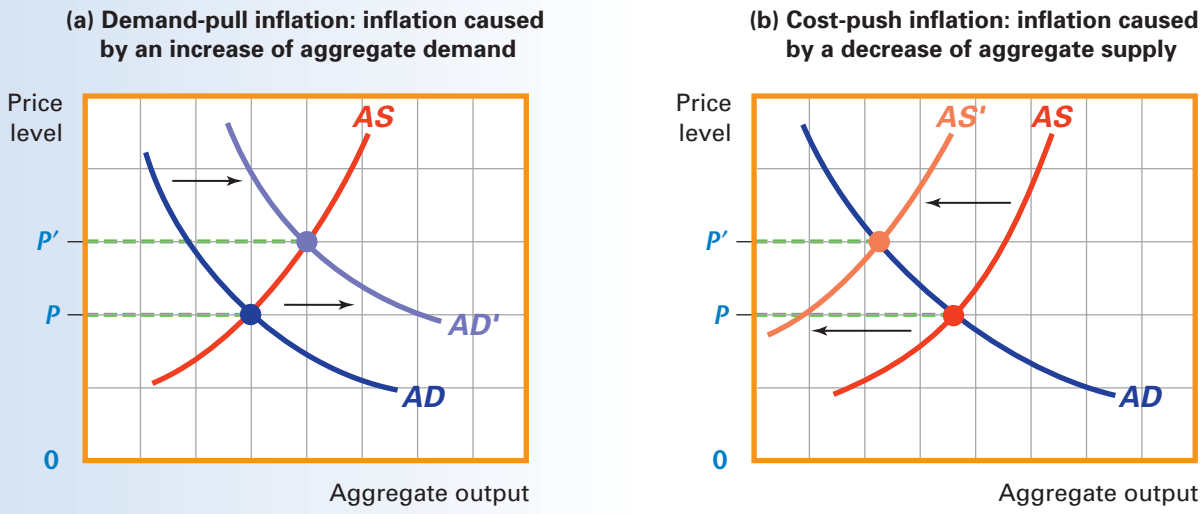
To generate continuous demand-pull inflation, the aggregate demand curve would have to keep shifting out along a given aggregate supply curve. Rising U.S. inflation rates during the late 1960s resulted from demand-pull inflation. At

NET Bookmark

The Bureau of Labor Statistics web site includes a home page for the Consumer Price Indexes (CPI). Access the Frequently Asked Questions about the CPI through thomsonedu.com/school/econxtra. What are the major groups in the CPI? Think of several examples for each category not listed on the FAQ sheet.

thomsonedu.com/school/econxtra

Inflation Caused by Shifts of the Aggregate Demand and Aggregate Supply Curves — **Figure 13.4**



Panel (a) illustrates demand-pull inflation. A rightward shift of the aggregate demand curve to AD′ "pulls" the price level up from P to P′. Panel (b) shows cost-push inflation, in which a leftward shift of the aggregate supply curve to AS′ "pushes" the price level up from P to P′.

that time, federal spending for the Vietnam War and for expanded social programs boosted aggregate demand.

Alternatively, inflation can arise from reductions in aggregate supply. This is shown in panel (b) of Figure 13.4, where a leftward shift of the aggregate supply curve raises the price level. For example, crop failures and cuts in OPEC oil supplies reduced aggregate supply during 1974 and 1975, thereby raising the price level.

Inflation stemming from decreases in aggregate supply is called **cost-push inflation**, suggesting that increases in the cost of production *push up* the price level. If the price level increases and real GDP decreases, this combination is called *stagflation,* which will be discussed later in this chapter. To generate sustained and continuous cost-push inflation, the aggregate supply curve would have to keep shifting to the left along a given aggregate demand curve.

An Historical Look at Inflation and the Price Level

The consumer price index is the price measure you most often encounter. As you have already learned, the *consumer price index (CPI)* measures the cost of a "market basket" of consumer goods and services over time. Figure 13.5 shows price levels in the United States since 1913, using the consumer price index. The price *level* is measured by an index relative to the base period of 1982 to 1984. As you can see, the price level actually was lower in 1940 than in 1920. Since 1940, however, the price level has risen steadily, especially during the 1970s.

✓ CHECKPOINT

Name the types of inflation and two sources of inflation.

Ask the Xpert!

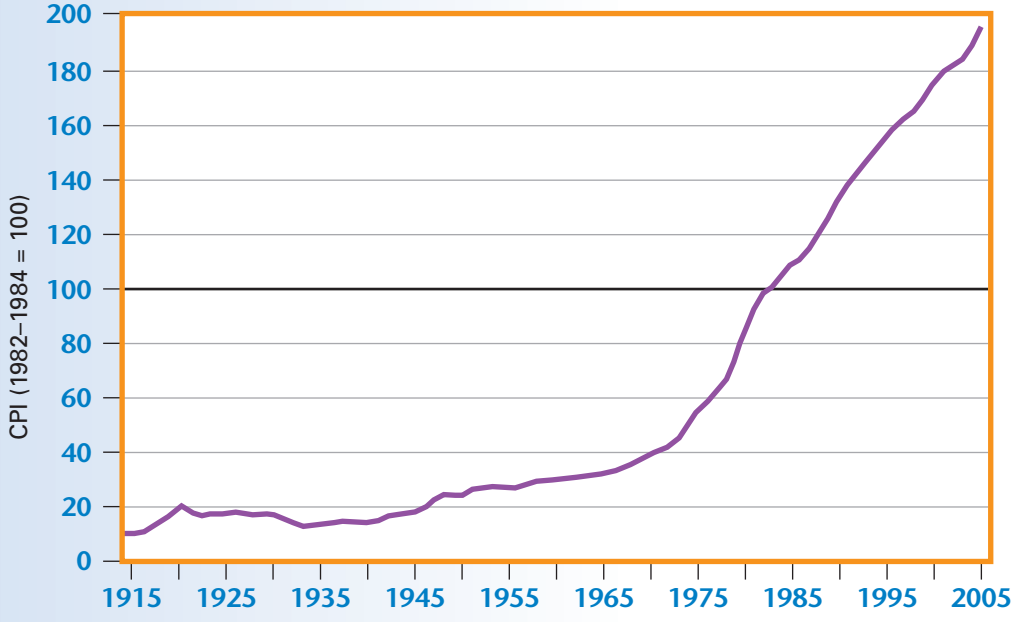
thomsonedu.com/school/econxtra

Which is worse: demand-pull inflation or cost-push inflation?

cost-push inflation

Inflation resulting from a leftward shift of the aggregate supply curve; reduced supply pushes up the price level

Consumer Price Index Since 1913 — **Figure 13.5**



Despite fluctuations, the price level, as measured by the consumer price index, was lower in 1940 than in 1920. Since 1940, the price level has risen almost every year.

Source: U.S. Bureau of Labor Statistics ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt.

ETHICS IN ACTION

Profits to Oil Companies: $8 Million an Hour

Not bad compensation if you can get it, and the major oil companies in the United States and Europe, who enjoyed enormous profits in recent years, have it. Growing demand for oil around the world, coupled with limited supply, boosted oil prices 38 percent from the previous year to reach a record $75.35 per barrel in 2006. The 2006 price contrasted sharply with the $20 per barrel price that prevailed for much of the 1990s. The high price also netted $17 billion in profits for the major U.S. suppliers in the first quarter of 2006. The EU and the U.S. government each considered enacting windfall profit taxes on this spike in earnings but decided not to. Perhaps government officials recognized that the oil companies develop refinery capacity as well as new sources of petroleum in times of high or low profits. The Dutch Finance Minister Gerrit Zalm stated the EU's consensus when he said, "We already tax oil. If you tax companies when they make high profits, what do you do when they make low profits? You would then be giving them a subsidy when the oil price is low."

THINK CRITICALLY

From an ethical perspective, should the government be concerned about high corporate profits in this and similar situations? Why or why not?

Sources: Simon Kennedy and Sandrine Rastello, "EU Rejects Windfall Tax On Oil Companies," *Bloomberg News,* May 6, 2006; "Windfall Profit Tax on Oil Companies Rejected," *Daily Telegraph* (London), May 6, 2006.

Impact of Inflation

Changes in the price level are nothing new. Prior to World War II, periods of inflation and deflation balanced out over the long run. Therefore, people had good reason to think the dollar would retain its purchasing power over the long term. Since the end of World War II, however, the CPI has increased by an average of 4.0 percent per year. That may not sound like much, but it translates into a *ten-fold* increase in the consumer price index since 1946. Thus, it now takes on average $10 to purchase what $1 would buy in 1946. *Inflation reduces the value of the dollar and erodes confidence in the value of the dollar as a store of value over the long term.*

Expected Versus Unexpected Inflation

What is the effect of inflation on the economy's performance? *Unexpected* inflation creates more problems for the economy than does *expected* inflation. To the extent that inflation is higher or lower than expected, it arbitrarily creates economic winners and losers.

Suppose inflation next year is expected to be 3 percent, and you agree to work next year for a wage that is 4 percent higher than your wage this year. In this case, you expect your *real* wage—that is, your wage measured in dollars of constant purchasing power—to increase by 1 percent. If inflation turns out to be 3 percent, you and your employer will both be satisfied with your nominal wage increase of 4 percent.

If, however, inflation turns out to be 5 percent, your real wage will fall. You will be a loser and your employer will be a winner. If inflation turns out to be only 1 percent, your real wage will increase by 3 percent. In this case, you will be a winner and your employer, a loser.

The arbitrary gains and losses arising from unexpected inflation are one reason that inflation is so unpopular. To the extent that inflation is fully expected by market participants, it is of less concern than unexpected inflation. Unexpected inflation arbitrarily redistributes income and wealth from one group to another.

The Transaction Costs of Unexpected Inflation

During long periods of price stability, people correctly think that they can predict future prices and can, therefore, plan accordingly. If inflation changes unexpectedly, however, the future is cloudier and planning gets harder.

Firms that deal with the rest of the world face added complications. These firms must not only plan for U.S. inflation. They also must anticipate how the value of the dollar might change relative to foreign currencies. Inflation uncertainty and the resulting exchange-rate uncertainty increase the difficulty of making international business decisions.

As inflation becomes less predictable, firms must spend more time coping with the effects of inflation. This reduces productivity. The transaction costs of market exchange increase. *High and variable inflation interferes with the ability to make long-term plans. It also forces buyers and sellers to pay more attention to prices.* For example, high and variable inflation rates in the United States during the 1970s and early 1980s slowed economic growth during that period.

Inflation and Interest Rates

No discussion of inflation would be complete without some mention of interest rates. *Interest* is the cost of borrowing and the reward for saving. As noted in Chapter 10, the *interest rate* is the interest per year as a percentage of the amount loaned.

The **nominal interest rate** measures interest in terms of current dollars. The nominal rate is the one that appears on the borrowing agreement and the rate discussed in the news media, such as a home mortgage rate of 6 percent. In contrast, the **real interest rate** measures interest in dollars of constant purchasing power as a percentage of the amount loaned. The real interest rate equals the nominal interest rate minus the inflation rate:

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Inflation rate}$$

With no inflation, the nominal interest rate and the real interest rate would be identical. But with inflation, the real interest rate is less than the nominal interest rate. For example, if the nominal interest rate is 5 percent and the inflation rate is 3 percent, then the real interest rate is 2 percent. Lenders and borrowers are concerned more about the real rate than the nominal rate. The real interest rate, however, is known only after the fact—that is, only after inflation actually occurs.

Because the future is uncertain, lenders and borrowers must form expectations about inflation. They base their willingness to lend and to borrow on these expectations. Lenders and borrowers base their decisions on the *expected* real interest rate, which equals the nominal rate of interest minus the expected inflation rate. Other things constant, the higher the expected inflation rate, the higher the nominal rate of interest that lenders require and that borrowers are willing to pay.

nominal interest rate

The interest rate expressed in current dollars as a percentage of the amount loaned; the interest rate on the loan agreement

real interest rate

The interest rate expressed in dollars of constant purchasing power as a percentage of the amount loaned; the nominal interest rate minus the inflation rate

✓ CHECKPOINT

What problems does unexpected inflation create for the economy?

Assessment 13.2

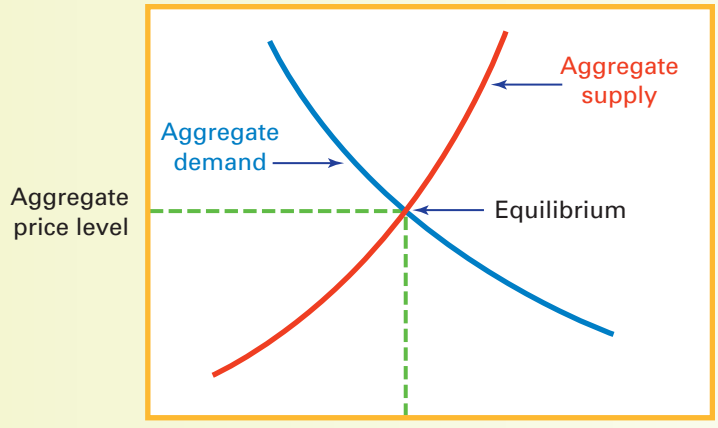
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Key Concepts

1. If you think prices will be 10 percent higher one year from now, will your current demand for goods and services be affected? Why or why not?
2. Suppose that the government reduced personal income taxes by 10 percent. At the same time, it increased social insurance payments by 10 percent. Why would these changes tend to cause inflation? Would this inflation be demand-pull or cost-push inflation?
3. Why would a 10 percent increase in prices be bad for an economy if most people expected prices to go up by only 2 percent?

Graphing Exercise

4. Consider this graph of the aggregate demand and aggregate supply curves. What would happen to the location of each of these curves, the average price level, and the amount of production as a result of each of the following events? Would the change in the price level be the result of a demand-pull or cost-push in the economy?
   - Many more foreign consumers choose to buy U.S. products.
   - There is a 20 percent increase in the cost of crude oil.
   - A new technology is invented that allows automobiles and trucks to be driven 100 miles per gallon of gasoline.
   - Federal income taxes are increased by 10 percent.



Think Critically

5. **Management** Suppose the inflation rate was 3 percent last year. This year the rate of inflation is 5 percent. You are the manager of a large business. It is your job to set the prices your firm will charge next year. How much will you choose to increase prices? Why will you make this choice?

13.3 Economic Instability

Objectives

- Use aggregate demand and aggregate supply to analyze the Great Depression.
- Use aggregate demand and aggregate supply to analyze demand-side economics.
- Use aggregate demand and aggregate supply to analyze stagflation.
- Use aggregate demand and aggregate supply to analyze supply-side economics.

Overview

The recent history of the U.S. economy can be divided into four economic eras: (1) before and during the Great Depression; (2) after the Great Depression to the early 1970s; (3) from the early 1970s to the early 1980s; and (4) since the early 1980s. The first era was marked by recessions and depressions, ending in the Great Depression of the 1930s. The second era was one of strong economic growth, with only moderate increases in the price level. The third era saw high unemployment combined with high inflation. The fourth era showed good growth on average with only moderate increases in the price level. Government leaders in all four eras had to deal with the challenge of economic instability.

Key Terms

laissez-faire

demand-side economics

stagflation

supply-side economics

In the News

Static Versus Dynamic Analysis of Tax Policy

For years advocates of supply-side economics have argued that over time tax cuts will pay for themselves. Economic growth caused by such cuts will result in more taxes collected. According to these supply-side economists, the government's "static" method of analyzing tax policy, which looks only at the direct effect on taxpayers, underestimates the impact of tax cuts. They support "dynamic" analysis, which looks at changes in consumer and business behavior caused by tax changes. For example, a tax break may lower a firm's tax bill, but that firm may invest the tax savings in equipment and may hire workers who would in time pay more income and sales taxes. In recent years the Congressional Budget Office has undertaken dynamic analysis, but has found only small economic effects of tax cuts. Still, the administration has proposed a "Division on Dynamic Analysis" in the Treasury Department. Critics worry, however, that because so many variables and judgments have to be made, an accurate dynamic analysis would be difficult.

THINK ABOUT IT

How important is it for policymakers to have an accurate analysis of the impact of taxes? Should there be two government agencies doing the analysis?

Sources: Nell Henderson, "Cheney Says New Unit Will Prove Tax Cuts Boost Revenue," *Washington Post,* February 11, 2006; "Undynamic Analysis," *Washington Post,* February 21, 2006.

The Great Depression and Before

Before World War II, the U.S. economy alternated between periods of prosperity and periods of sharp economic decline. The longest contraction on record lasted five and a half years between 1873 and 1879. During this time, 80 railroads went bankrupt and most of the nation's steel industry shut down. During the depression of the 1890s, the unemployment rate topped 18 percent. In October 1929, the stock market crashed. This began what was to become the deepest—though, at four and a half years, not the longest—economic contraction in the nation's history. This period is known as the Great Depression of the 1930s.

Decrease in Aggregate Demand

In terms of aggregate demand and aggregate supply, the Great Depression can be viewed as a leftward shift of the aggregate demand curve, as shown in Figure 13.6. AD_{1929} is the aggregate demand curve in 1929, before the onset of the depression. Real GDP in 1929 was $865 billion, measured in dollars of 2000 purchasing power. The price level was 12.0, relative to a 2000 base-year price level of 100.

By 1933, aggregate demand had shifted leftward, decreasing to AD_{1933}. Why did aggregate demand decline so much? Though the causes are still debated, the list of possibilities is long. It includes the stock market crash of 1929, grim business expectations, a drop in consumer spending, widespread bank failures that wiped out nearly 10 million bank accounts, a sharp decline in the nation's money supply, and severe restrictions on world trade.

Because of the decline in aggregate demand, both the price level and real GDP dropped. Real GDP fell 27 percent, from $865 billion in 1929 to $635 billion in 1933, and the price level fell 26 percent, from 12.0 to 8.9. As real GDP declined, the unemployment rate soared, climbing from 3 percent in 1929 to 25.2 percent in 1933. This is the highest unemployment rate ever recorded for the United States.

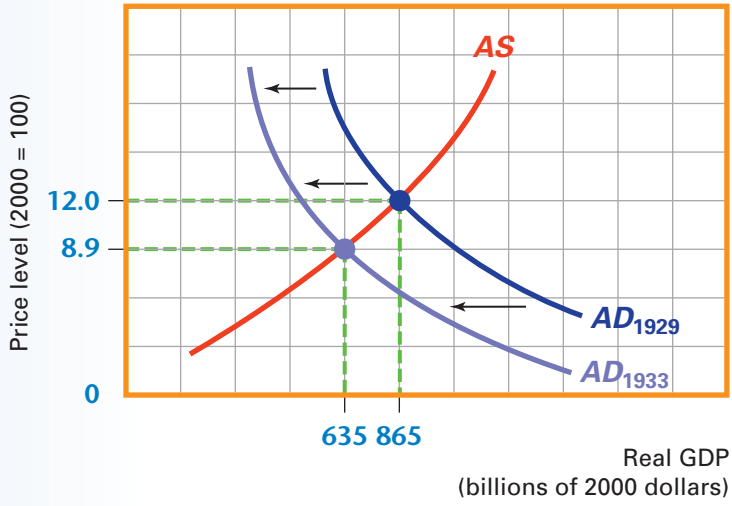
Laissez-Faire

Before the Great Depression, macroeconomic policy was based primarily on the **laissez-faire** doctrine that said government should not intervene in a market economy beyond the minimum required to maintain peace and property rights.

laissez-faire
The doctrine that the government should not intervene in a market economy beyond the minimum required to maintain peace and property rights

The Decrease of Aggregate Demand Between 1929 and 1933 — **Figure 13.6**

The Great Depression of the 1930s can be represented by a leftward shift of the aggregate demand curve, from AD_{1929} to AD_{1933}. In the resulting depression, real GDP fell $230 billion, or 27 percent. The price level dropped from 12.0 to 8.9, or 26 percent.





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Day-to-day life during the Great Depression was grim. The unemployment rate reached 25.2 percent in 1933. Many people could not afford to buy food and gathered in "breadlines" to receive free food from charities. How did the sharp drop in aggregate demand from 1929 to 1933 lead to such high unemployment?

This idea dates back at least to Adam Smith. In his 1776 book *The Wealth of Nations,* Smith argued that if people were allowed to pursue their self-interest in free markets, resources would be guided as if by an "invisible hand" to produce the greatest, most efficient level of aggregate output.

Although the U.S. economy had suffered several sharp contractions since the beginning of the nineteenth century, most economists of the day viewed these as a natural phase of the economy—unfortunate, but ultimately good for the economy.

✓ CHECKPOINT

Use aggregate demand and aggregate supply to analyze the Great Depression.

From the Great Depression to the Early 1970s

The Great Depression was so severe that it stimulated new thinking about how the economy worked—or didn't work. In 1936, John Maynard Keynes (1883–1946) published *The General Theory of Employment, Interest, and Money,* the most famous economics book of the twentieth century. In it, Keynes argued that aggregate demand was unstable, in part because investment decisions were often guided by the unpredictable "animal spirits" of business expectations.

If businesses grew pessimistic about the economy, they would cut investment spending. This, in turn, would reduce aggregate demand. This reduction in aggregate demand would cut output and employment. For example, investment dropped more than 80 percent between 1929 and 1933. Keynes saw no natural market forces operating to ensure that the economy would return to a higher level of output and employment.

Stimulating Aggregate Demand

Keynes proposed that the government shock the economy out of its depression by increasing aggregate demand. The government could achieve this stimulus directly by increasing its own spending, or indirectly by cutting taxes to stimulate consumption and investment. One

problem was that either action could create a federal budget deficit. A *federal budget deficit* measures the amount by which total federal spending exceeds total federal revenues.

To understand what Keynes had in mind, imagine federal budget policies that would increase aggregate demand in Figure 13.6. This would shift the aggregate demand curve to the right, back to its original position. If the aggregate demand curve shifts rightward back to its original position, it would intersect the aggregate supply curve at the original equilibrium point. This would raise real GDP, which would increase employment.

Demand-Side Economics

According to Keynes, *fiscal policy*—or changes in government spending and taxes—was needed to compensate for what he viewed as the instability of private spending, especially investment. If demand in the private sector declined, Keynes said the government should pick up the slack.

demand-side economics

Macroeconomic policy that focuses on shifting the aggregate demand curve as a way of promoting full employment and price stability

You can think of the Keynesian approach as **demand-side economics** because it focused on how changes in aggregate demand could promote full employment. Keynes argued that government stimulus could jolt the economy out of its depression and back to health. Once investment returned to normal, the government stimulus would no longer be necessary.

World War II and Aggregate Demand

World War II boosted demand for tanks, ships, aircraft, and the like. This increased output and employment. It also seemed to confirm the powerful impact that government spending could have on the economy. The increase in government spending, with no increase in tax rates, created federal budget deficits during the war.

Immediately after World War II, memories of the Great Depression were still fresh. Trying to avoid another depression, Congress approved the *Employment Act of 1946,* which imposed a clear responsibility on the federal government to foster "maximum employment, production, and purchasing power." The act also required the president to report each year on the state of the economy and to appoint a *Council of Economic Advisers*. This council is a three-member panel of economists, with a professional staff, to provide the president with economic advice.

The Golden Age of Keynesian Economics

The economy seemed to prosper during the 1950s, largely without the added stimulus of fiscal policy. The 1960s, however, proved to be the *golden age of Keynesian economics*. During this period, some economists thought they could "fine-tune" the economy to avoid recessions—just as a mechanic could fine-tune a race car to achieve top performance. During the early 1960s, nearly all advanced economies around the world enjoyed low unemployment and healthy growth with only modest inflation. In short, the world economy was booming, and the U.S. economy was on top of the world.

The economy was on such a roll that toward the end of the 1960s, some economists began to think the business cycle was dead. In the early 1970s, however, the cycle returned with a fury. Worse yet, the problem of recession was compounded by rising inflation, which increased during the recessions of 1973–1975 and 1980. Until then, inflation was limited primarily to periods of expansion. Confidence in demand-side policies was shaken.

✓ CHECKPOINT

Use aggregate demand and aggregate supply to analyze demand-side economics.

Stagflation: 1973–1980

During the late 1960s, federal spending increased on both the war in Vietnam and social programs at home. This combined stimulus increased aggregate

demand enough that in 1968, the inflation rate jumped to 4.4 percent, after averaging only 2.0 percent during the previous decade. Inflation climbed to 4.7 percent in 1969 and to 5.3 percent in 1970.

Reduction in Aggregate Supply

Inflation rates were so alarming that in 1971, President Richard Nixon tried to put a ceiling on price and wage increases. The ceiling was eliminated in 1973, about the time that crop failures around the world caused grain prices to climb. To compound these problems, OPEC cut its supply of oil, thus increasing oil prices. Decreases in the supplies of grain and oil reduced aggregate supply in the economy.

This reduction in aggregate supply is shown in Figure 13.7 by the leftward shift of the aggregate supply curve from AS_{1973} to AS_{1975}. This created the **stagflation** of the 1970s, meaning a *stag*nation, or a contraction, in the economy's aggregate output combined with in*flation,* or a rise, in the economy's price level. Real GDP declined by about $120 billion between late 1973 and early 1975. At the same time, the price level jumped about 13 percent. The unemployment rate climbed from 4.9 percent in 1973 to 8.5 percent in 1975. Stagflation created higher unemployment and higher inflation.

Stagflation Repeats in 1980

Stagflation hit again in 1980, fueled partly by another jump in OPEC oil prices. Real GDP fell more than $100 billion, and the price level climbed nearly 10 percent. Because the problem of stagflation was primarily on the supply side, not on the demand side, Keynesian demand-management solutions seemed ineffective. Increasing aggregate demand might reduce unemployment, but it would worsen inflation.

✓ CHECKPOINT

Use aggregate demand and aggregate supply to analyze stagflation.

Since 1980: Improving Growth, Lower Inflation, but Higher Federal Deficits

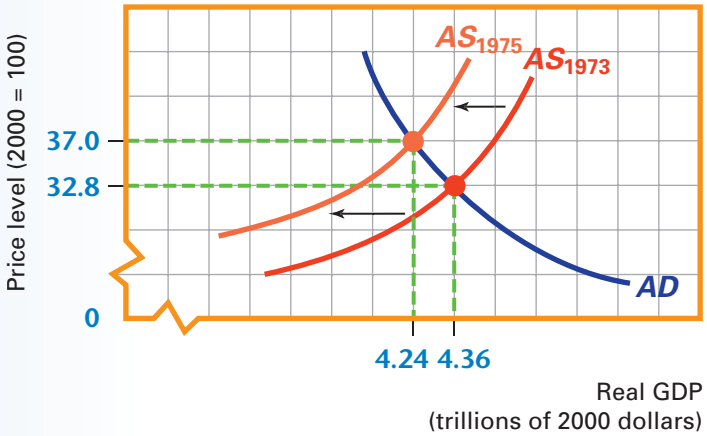
Increasing aggregate supply, or shifting the aggregate supply curve rightward, seemed an appropriate way to combat stagflation. Such a move would both

stagflation

A decline, or *stag*nation, of a nation's output accompanied by a rise, or in*flation,* in the price level

Stagflation Between 1973 and 1975 — **Figure 13.7**

The stagflation of the mid 1970s can be represented as a reduction of aggregate supply from AS_{1973} to AS_{1975}. Between late 1973 and early 1975, real GDP fell about $120 billion (stagnation), and the price level rose about 13 percent (inflation).



lower the price level and increase output and employment. Attention thus turned from aggregate demand to aggregate supply.

Supply-Side Economics

supply-side economics
Macroeconomic policy that focuses on a rightward shift of the aggregate supply curve through tax cuts or other changes that increase production incentives

A key idea behind **supply-side economics** was that cutting tax rates would stimulate aggregate supply. Lower tax rates would increase the incentive to supply labor. According to advocates of the supply-side approach, the resulting increase in aggregate supply would expand real GDP and reduce the price level. This, however, was easier said than done.

In 1981, President Ronald Reagan and Congress cut personal income tax rates by an average of 23 percent to be phased in over three years. They hoped the tax cuts would stimulate economic growth enough that the government's smaller share of a bigger pie would exceed what had been its larger share of a smaller pie.

Before the tax cut was implemented, recession hit in late 1981. The unemployment rate reached 10 percent by late 1982. In 1983, the economy began what at the time would become the longest peacetime expansion on record. During the rest of the 1980s, output grew, unemployment declined, and inflation declined. However, the growth in federal spending exceeded the growth in federal tax revenues during this period. Therefore, federal budget deficits swelled.

The Graphing Workshop

Giant Federal Deficits

Federal budget deficits worsened with the onset of a Gulf War recession in 1990. That recession officially ended in early 1991. However, the deficit continued to grow and topped $290 billion in 1992. Annual deficits accumulated as a growing federal debt. *Government debt* measures the net accumulation of prior deficits. Measured relative to GDP, the federal debt nearly doubled from 33 percent in 1980 to 64 percent in 1992.

During the 1990s, policymakers began to worry more about large federal deficits. To reduce them, President George H. W. Bush increased taxes in 1990. President Bill Clinton increased taxes on the rich in 1993. A newly elected Republican Congress reduced federal spending growth beginning in 1995. *Higher tax rates and a slower growth in federal spending combined with an improving economy to reduce federal deficits.* By 1998, the federal budget yielded a surplus.

By early 2001, the U.S. economic expansion became the longest on record. During the decade-long expansion, 22 million jobs were added, the unemployment rate dropped from 7.5 percent to 4.2 percent, and inflation remained low.

After achieving this record, the economy entered a recession in April 2001. Despite the terrorist attacks of September 2001, the recession ended in November 2001. Although the recession officially ended, unemployment rose into 2002, in what to that point was called a "jobless recovery." Jobs started coming back in 2003 and beyond, with six million jobs added by early 2006. However, the mounting cost of the war in Iraq combined with tax cuts to worsen federal deficits. You will learn more about federal deficits in Chapter 15.

NETBookmark

Review the Summary of Commentary on Current Economic Conditions by Federal Reserve District, published by the Federal Reserve System. Access this book, commonly known as "The Beige Book," through thomsonedu.com/school/econxtra. Summarize the national economic conditions for the most recent period covered in the report. Overall, is the economy healthy? What problems are there?

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✓CHECKPOINT

Use aggregate demand and aggregate supply to analyze supply-side economics.



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Describe the trends in employment since 1980.

TeamWork

Organize the class into four groups. Each group should work with a different economic era. Analyze the era by drawing an aggregate supply and aggregate demand graph. A representative from each group should then present and explain their group's graph in class.

e-conomics

LAYERS OF THE ONION REVEAL HOW TO SUCCEED WITH AN ONLINE BUSINESS

During the 1990s, dozens of new companies emerged in an attempt to cash in on the success of the Internet. When the high-tech boom went bust at the end of the decade, most of these firms folded. In the unstable new world of Internet commerce, many companies earned revenues, but few turned a profit. One popular Internet company survived and became more profitable than ever. TheOnion.com, a free online humor magazine, thrived due to a business strategy based on diversification. *The Onion* started out as a satirical humor magazine that poked fun at current news events. When the magazine went online in 1996, it quickly gained a popular following with its bizarre stories and attention-getting headlines, such as "Clinton Deploys Vowels to Bosnia: Cities of Sjlbvdnzv, Grny to Be First Recipients." As it gained more than one million readers, it kept its spending under control and did not rely entirely on revenues from online advertisers. It continued to publish a print edition, branching out into regional editions mocking local personalities. It also published a series of popular books. Onion leaders expanded the brand into movie deals and a subscription service offering more humor for readers. In 2006 the Onion Radio News Podcast began and shortly landed in the #1 slot on the iTunes most popular podcasts list.

THINK CRITICALLY

By 2003, TheOnion.com was earning annual profits of $7 million that were expected to grow by 25 percent over the next five years. What assumptions about aggregate demand were made in estimating this growth rate?

Sources: *Hoover's Company Records,* A Dun and Bradstreet Company, May 2, 2006; Onion Inc., *U.S. Business Directory,* February 9, 2006; "The Onion: Funny Site Is No Joke," Business 2.0, www.cnn.com/

Assessment 13.3

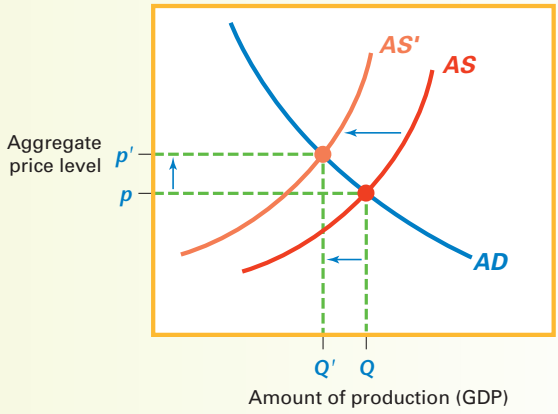
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Key Concepts

1. Before 1929, most economists thought the federal government should always have a balanced budget (government tax revenues = government spending). When the Great Depression began in 1929, government tax revenues fell rapidly. The federal government responded by cutting spending. What was the impact of this policy on the economy?
2. People who support the economic theories of Keynes think that a stable economy will result from a steady increase of aggregate demand. Given this idea, what would Keynes have recommended the federal government do if consumption and investment declined because people and business owners started to worry about the future?
3. How could stagflation result from a large increase in the costs of production throughout the economy?

Graphing Exercise

4. Study this graph of aggregate demand and supply. The aggregate supply curve has shifted to the left from *AS* to *AS′* because of an increase in the costs of production. This has increased the average price level and reduced the amount of production. Which of the policies listed below might reduce costs of production and cause the aggregate supply curve to return to its original location at *AS*? Why are these policies examples of supply-side economics?



a. The government reduces taxes for businesses that buy new technology.
b. The government helps pay the wages of newly hired workers.
c. The government lowers tariffs on imported raw materials.
d. The government reduces taxes on business profits.
e. The government gives grants to people who carry out applied research.

Think Critically

5. **History** The U.S. government borrowed most of the money it needed to pay for its military efforts during World War II. The national debt increased by $23.5 billion in 1943, $64.3 billion in 1944, and $10.7 billion in 1945. In these years, the unemployment rate fell from its 1940 level of 14.6 percent, to 4.4 percent in 1942, 1.7 percent in 1943, and 1.0 percent in 1944. How did these data support Keynes's theory that the way to combat a depression is to have more government spending?

CONNECT TO HISTORY



The New Deal and the Deficit

During the early years of the Great Depression, many people—who believed that the economy would correct itself—suggested a laissez-fare approach to the business cycle. They viewed depressions as a helpful and necessary purge of the economy. Budget deficits were feared as inflationary and considered a bad example for the nation's citizens.

Still, from 1929 to 1933, prices dropped severely and the government deficit increased. Early attempts by President Herbert Hoover to balance the budget, such as sharply increasing tariffs on imports, made matters worse. In the face of increasing deficits, Hoover resisted more government intervention in the economy. He continued to advocate spending cuts and tax increases, telling Congress that "nothing is more necessary at this time than balancing the budget."

When Franklin D. Roosevelt swept into office in 1932, he initiated a host of programs known collectively as the New Deal. Although Roosevelt believed in a balanced budget, he was—unlike Hoover—willing to accept deficits in order to pump government spending into the economy. The Reconstruction Finance Corporation, first begun under Hoover, was beefed up. New programs—such as the Public Works Administration, the Agricultural Adjustment Administration, National Recovery Administration, and later the Works Progress Administration—were designed to use federal spending to stimulate the economy.

Under the New Deal, the economy began a slow recovery until 1937, when Roosevelt, believing that the nation's economy was strong enough to continue on its own, announced a reduction in federal spending and a plan to balance the budget by 1939. Instead, by the fall of 1937, the economy began to falter and the president called for a resumption of deficit spending in April 1938.

By this time, many in the government had become supporters of the ideas of John Maynard Keynes. Keynes himself, however, believed Roosevelt's latest attempts to build up the economy needed far more government spending than the $3 billion prescribed by the president. Before the results of the Second New Deal could be fully judged, World War II intervened and the country was brought back to full employment. The events of the 1930s, however, changed how many Americans viewed fiscal policy. As deficit spending became more accepted, they saw the government as having a crucial role in the nation's economy.

THINK CRITICALLY

Evaluate and compare the wisdom of deficit spending by the government from an economic perspective, from a social perspective, and from a political perspective.



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John Maynard Keynes (1883–1946)

13.4 Poverty

Objectives

- Describe the link among jobs, unmarried motherhood, and poverty.
- Identify some unplanned results of income-assistance programs.

Overview

In a market economy, your income depends primarily on how much you earn, which depends on the productivity of your resources. The problem with allocating income according to productivity is that some people have difficulty earning income. How should the government respond to the challenge of poverty? Families where the head of household has a job are much more likely to escape poverty than are families with no workers. Thus, the government's first line of defense in fighting poverty is to promote a healthy economy, thereby providing job opportunities for all who want to work.

Key Terms

cycle of poverty

welfare reform

In the News

"Near Poor" Status Threatens Millions of Americans

People that some scholars call the "near poor" are increasingly at risk of sliding down the economic ladder. Defined as those whose incomes place them between the poverty line and double the poverty line, these households are only a prolonged illness or job loss away from falling into poverty. "There's strong evidence that over the last five years, record numbers of lower-income Americans find themselves in a more precarious economic position than at any time in recent memory," observes Mark R. Rank, a sociologist at Washington University in St. Louis. He has found that for all ages (except those in their 70s) the chances of temporary poverty doubled in the 1990s. During that same period, 36 percent of people in their 40s spent at least one year below the poverty line. In the 1980s the percentage was around 13 percent. While 2004 figures place 37 million Americans below the poverty level, they also place 54 million Americans at risk in the category of "near poor." Most of them work in jobs with no health insurance and some work in jobs for which they cannot get access to unemployment insurance.

THINK ABOUT IT

What steps can the "near poor" take to lessen the impact if they fall into poverty?

Source: Erik Eckholm, "America's 'Near Poor' Are Increasingly at Economic Risk, Experts Say," *New York Times,* May 8, 2006.

Poverty and the Economy

The best predictor of whether a family is poor is whether someone in that family has a job. Thus the most direct way the government can help reduce poverty is to nurture a healthy economy. The stronger the economy, the greater the job opportunities, and the more likely people will find good jobs.

Poverty and Jobs

The poverty rate is much higher among families with no workers. Figure 13.8 shows the poverty rate based on the type of family and on the number of workers in the family. Overall, the poverty rate is about four times greater in families with no workers than in families with at least one worker. *The poverty rate of families headed by a female and with no workers is 16 times greater than the rate for married-couple families with at least one worker.*

Poverty and Unemployment

Perhaps the best indicator of whether or not job opportunities are readily available is the unemployment rate. The lower the unemployment rate, the greater the likelihood that someone who wants to work will find a job. The more jobs, the lower the poverty rate.

Figure 13.9 shows poverty rates and unemployment rates in the United States each year since 1969. As you can see, the poverty rate tends to rise when the unemployment rate increases and fall when the unemployment rate declines. For example, between 1979 and 1982 the unemployment rate climbed from 5.8 percent to 9.7 percent. During that same period, the nation's poverty rate rose from 11.7 percent to 15.0 percent.

More recently, the unemployment rate fell from 7.5 percent in 1992 to 4.0 percent in 2000. During that same period, the poverty rate declined from 14.8 percent to 11.3 percent. Both unemployment and poverty increased in the recession year of 2001.

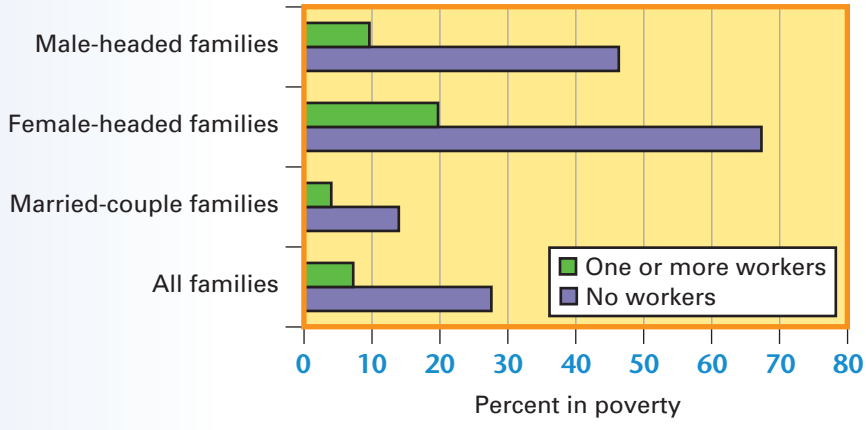
Unmarried Motherhood and Poverty

Even when the unemployment rate is low, the poverty rate may remain stubbornly high. A strong economy with low unemployment is little aid to families with nobody in the labor force. Chapter 3 noted that young, single motherhood is a recipe for poverty. Often the young mother drops out of school, which reduces her future earning possibilities when and if she seeks work outside the home.

U.S. Poverty Rates by Family Type and Number of Workers — **Figure 13.8**

Regardless of the family structure, poverty rates in the United States are much higher in families with no workers.

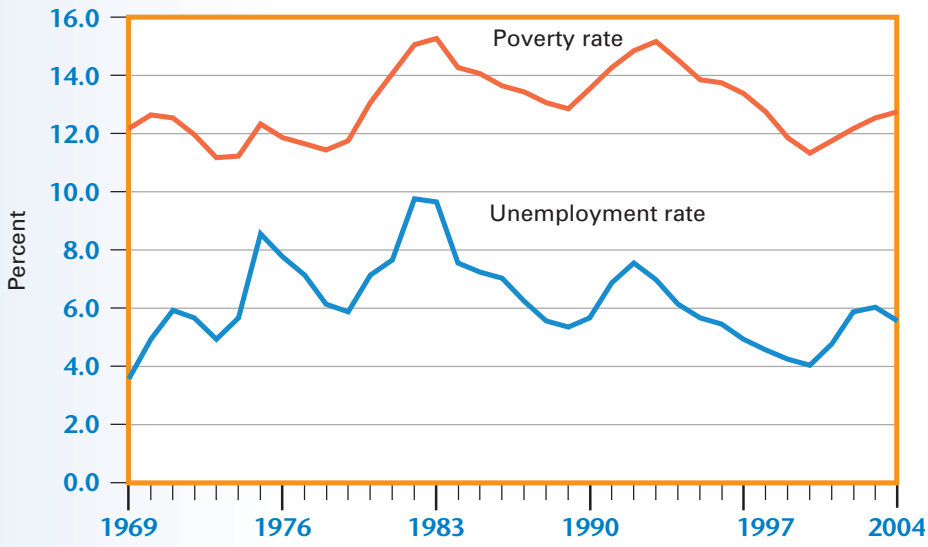
Source: U.S. Census Bureau, *Annual Demographic Survey*. Poverty rates are for 2004.



U.S. Poverty Rates and Unemployment Rates — **Figure 13.9**

The top line shows the percentage of the U.S. population below the official poverty level. The bottom line shows the percentage of the U.S. labor force that is unemployed. Note that the poverty rate and unemployment rate tend to move together.

Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics.



Because of a lack of education and limited job skills, most young single mothers go on welfare. Before recently imposed lifetime limits on welfare, the average never-married mother had been on welfare for a decade.

Figure 13.10 shows the poverty rates for each of the 50 states. Those states with a deeper shade of pink have higher poverty rates. States with no shading have lower rates. As you can see, poverty rates are higher across the bottom half of the United States. Poverty rates tend to be higher in states where births to single mothers make up a larger percentage of all births. For example, New Mexico, Louisiana, and Mississippi have the highest rates of births to unmarried mothers. Nearly half of all births in these three states were to unmarried mothers. These three states also have among the highest of poverty rates.

✓ CHECKPOINT

What is the link between jobs, unmarried motherhood, and poverty?

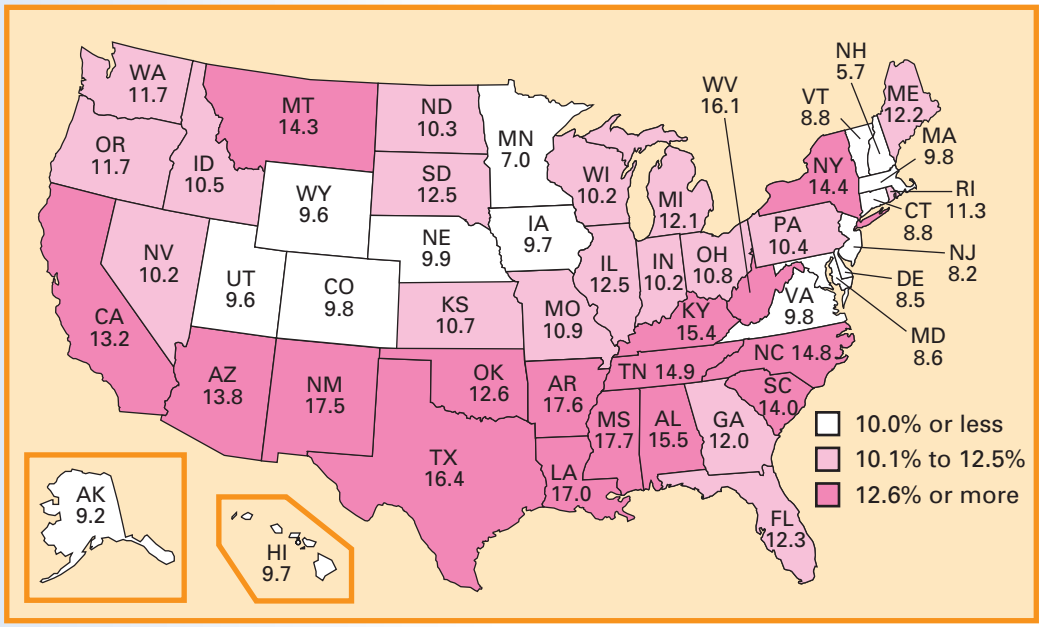
Unplanned Results of Income Assistance

On the plus side, antipoverty programs increase the consumption possibilities of poor families. This is important because children are the largest group living in poverty. However, programs to assist the poor may have other effects that limit their ability to reduce poverty. Consider some unplanned results of these programs.

Why Work?

Society, through government, tries to provide families with an adequate standard of living, but society also wants to ensure that only the poor receive benefits. As you learned in Chapter 3, income assistance consists of a combination of cash and in-kind transfer programs. Because these programs are designed to help the poor and only the poor, welfare benefits decline as income from other sources increases. This has resulted in a system in which transfer payments decline sharply as earned income increases.

Poverty Rates in the United States **Figure 13.10**



States with a deeper shade of pink have higher poverty rates. States with no shading have lower rates. Note that poverty rates are higher across the southern states. Rates are lower along the Northern Atlantic Coast and across the Midwest.

Source: U.S. Census Bureau. Rates are averages for 2002, 2003, and 2004.

An increase in earnings reduces benefits from cash assistance, Medicaid, food stamps, housing assistance, energy assistance, and other poverty programs. In some cases, total welfare benefits are cut by $1 or more as earned income increases by $1. Because welfare benefits decline with earnings, this reduces the incentive to find work.

Why work if doing so simply reduces your income and your standard of living? After all, holding even a part-time job involves additional expenses—for transportation and childcare, for instance—not to mention the loss of free time.

In many cases, the value of welfare benefits would exceed the disposable income resulting from full-time employment. Such a system can frustrate people trying to work their way off welfare. *The high tax rate on each additional dollar earned discourages employment and self-sufficiency.*

Long-Term Dependency

The longer people are out of work, the more their job skills weaken. As a result, when those who have been on welfare for years finally do look for work, their productivity and their pay are usually lower than when they were last employed. This lowers their expected wage, thus making work even less attractive. Some economists argue that in this way, welfare benefits can lead to long-term dependency on welfare. While welfare seems to be a rational choice in the short run, it has unfavorable long-term consequences for both the family and for society.

By tracking welfare recipients over time, economists have learned that most recipients received welfare for less than a year, but about one third had remained on welfare for at least eight years. Thus there was a core of long-term recipients.

Cycle of Poverty

A second and more serious concern is that children in welfare families may end up on welfare themselves when they grow up. This is referred to as the **cycle of poverty**. Why might this occur? Children in welfare households may learn

cycle of poverty
Children in welfare families may end up on welfare themselves when they grow up

the ropes about the welfare system and may come to view welfare as a normal way of life rather than as a temporary bridge over a rough patch.

Research indicates that daughters from welfare families are more likely than daughters in other families to participate in the welfare system themselves. It is difficult to say whether welfare "causes" the link between mother and daughter, because the same factors that contribute to a mother's welfare status also can contribute to her daughter's welfare status.

Welfare Reforms

Concern about welfare dependency and a cycle of poverty prompted **welfare reform**, or an overhaul of the welfare system in 1996. The reform imposed a lifetime welfare limit of five years per recipient. As a condition of receiving welfare, the head of the household also must participate in education and training programs, search for work, or take some paid or unpaid position. The idea is to help people on welfare to learn about the job market. Those who find work are able to maintain some of their welfare benefits, such as free medical care, during a transition period from welfare to work. Those who find jobs also get childcare services. This increases the incentive to work. The earned-income tax credit also boosts pay and thus the attractiveness of work.

Evidence from various states indicates that programs involving mandatory job searches, short-term unpaid work, and training increase employment. Those involved in such programs left welfare rolls sooner. Between 1995 and 2006, the number of welfare recipients fell by more than half. For example, welfare rolls in New York City dropped from 1.2 million in 1995 to 0.4 million in 2006.

welfare reform
An overhaul of the welfare system in 1996 that imposed a lifetime welfare limit of five years per recipient and other conditions

NET Bookmark

The U.S. Department of Health and Human Services' Administration for Children and Families (ACF) web site provides information about the Temporary Assistance for Needy Families (TANF) program. Access this site through thomson.edu.com/school/econxtra. Read the information about the TANF program, and write down five facts you learned about it.

thomsonedu.com/school/econxtra

✓ CHECKPOINT

What are some unplanned results of income-assistance programs?



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What are the benefits of free or low-cost childcare programs for families trying to work their way out of the welfare system?

Span the Globe

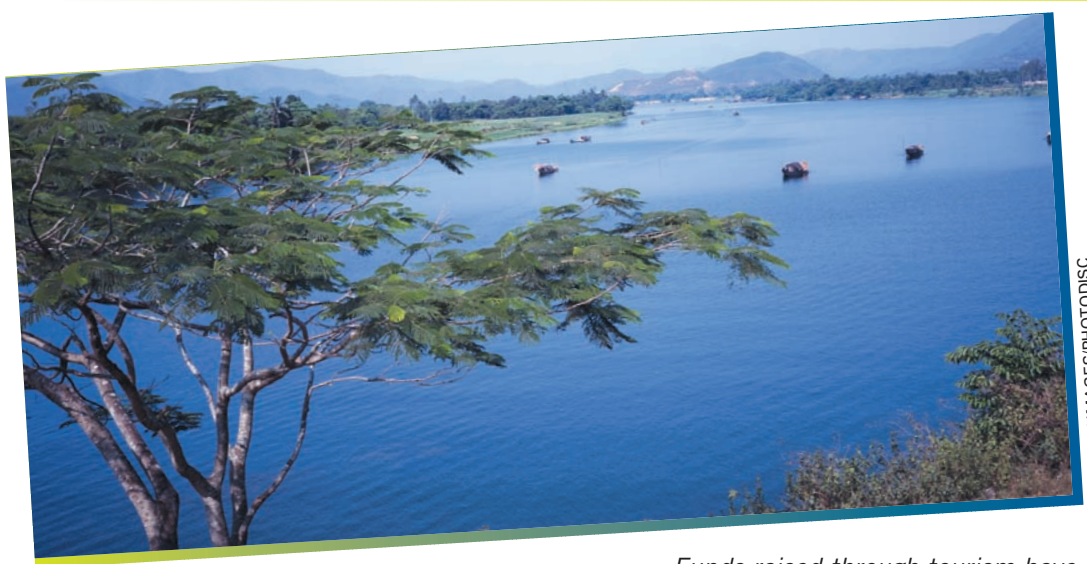
Pro-Poor Tourism

For many people in the world's poorest countries, poverty is an ongoing fact of life. About 80 percent of the world's poorest people live in just 12 countries. In many of these countries, a variety of factors make it difficult to build an economic structure that can support the majority of citizens. Recently, though, some economists and developers have begun to promote the idea of building up pro-poor tourism in these countries. This idea involves promoting tourism so as to provide jobs and ongoing economic growth that will allow the majority of the people to rise out of poverty without destroying the natural environment. Because many of these countries have no major industry, their undeveloped environments are an attractive draw for tourists. Advocates of pro-poor tourism warn, however, that great care must be taken to ensure that these environments are not harmed by the growth of tourism. In the past, the growth of tourism in some areas has come at the expense of poor people. In Indonesia, for example, land that poor people once used for agriculture was bought up by developers for hotels and golf courses. Some of these projects cut off land and water access to the poor without providing them with enough new jobs to compensate for the loss. Pro-poor tourism seeks to minimize these negative results. Development is focused on preserving the natural environment and culture while helping to build a system of public works that can be used by both tourists and local residents. In the Mekong River Basin of Asia, for example, pro-poor tourism loans have been used to help build roads, piers, and better walking paths. These projects improve mobility yet preserve the beauty of the countries in this region and help its residents earn money.

THINK CRITICALLY

Do you think pro-poor tourism is an effective way to help the people in the world's poorest countries? Why or why not?

Sources: "Pro-poor Tourism: Harnessing the World's Largest Industry for the World's Poor," International Institute for Environment and Development, May 2001; "Pro-poor Tourism: Opportunities for Sustainable Local Development," *D&C Development and Cooperation* (No. 5, September/October 2000, pp. 12–14.



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Funds raised through tourism have been used to improve the Mekong River Basin of Asia. According to the feature, what benefits do residents of this area receive as a result of this tourism?

Assessment 13.4

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Key Concepts

1. Why is nurturing a healthy economy the most direct way the government can help reduce poverty?
2. What reasons can you identify to explain why the number of welfare recipients in the United States fell by more than half between 1995 and 2006?
3. Does the fact that fewer people are receiving social benefits necessarily mean that fewer people are living in poverty? Explain why or why not.

Graphing Exercise

4. Many people think the bulk of federal government transfers are used to support the poor. This is not the case. In 2003, all federal government transfers to individuals totalled $1,275.1 billion. The table shows how these payments were distributed. Use the data in the table to construct a pie chart that shows how federal transfers were distributed. Is there any information in the graph that you find surprising? Explain why or why not.

Federal Transfers to Individuals by Use, 2003 (in billions of dollars)

Type of Spending	Amount	Percent of Total
Retirement and Disability Insurance (Social Security)	$493.1	38.7%
Medical Payments (Medicare and Medicaid)	$549.0	43.1%
Income Maintenance (SSI and Welfare)	$130.5	10.2%
Unemployment Insurance Benefits	$ 53.5	4.2%
Veteran's Benefits	$ 31.9	2.5%
Other Transfers to Individuals	$ 17.1	1.3%
Source: *Statistical Abstract of the United States,* 2006, p. 358.		

Think Critically

5. **Psychology** Investigate the impact of poverty on people's self-image. Do people who live in poverty feel they are victims of circumstances that are beyond their control? Do they feel there is something that they have done that has caused them to be poor? How might these feelings change the way poor people live and relate to other people in society?
6. **Management** Suppose you are the owner of a small business that produces precision parts for specialized machines. Your workers are very skilled. If one of your workers were to leave, it would take a long time to find and retrain a replacement. The economy has been in a recession for the past six months, and your firm's sales have fallen by 30 percent. You are having trouble selling enough product to pay your workers and keep them busy. You are thinking of laying off three of your ten workers. What reasons are there for you to do this or not do this? Explain each reason.

Sharpen Your Skills



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Make Inferences

Data often can be interpreted in more than one way. For example, if all the students in a class receive "A" grades on a test, does it mean they are all very bright, or does it mean that the test was very easy? You may not be able to make the correct interpretation of a set of data without more information. But what if additional information is not easily available? Does that mean we should simply ignore the data? In economics the answer often is "no." In many situations economists make *inferences* or what might be called "best guesses" about what a set of data tells them. They may be wrong, but a reasonable explanation can be better than no explanation at all.

Apply Your Skill

Consider possible relationships between poverty rates and the number of people who received public assistance through the Temporary Assistance for Needy Families (TANF) program. Consider the table and make an inference about the relationship between the number of recipients of assistance and the poverty rate.

Number of People Receiving Benefits Through the Temporary Assistance for Needy Families Program,* 1980–2004
Numbers in thousands of people

Year	Recipients	Poverty Rate
1980	10,774	13.0%
1985	10,855	14.0%
1990	11,695	13.5%
1995	13,418	13.8%
2000	5,778	11.3%
2004	4,783	12.7%

*Prior to 1996, these data are for the Aid to Families with Dependent Children (AFDC) program. Although these programs are not exactly the same, the data are roughly equivalent to each other.
Source: *Statistical Abstract of the United States,* 2006, pp. 372 and 474.

13 Chapter Assessment

Summary

13.1 Unemployment

a Unemployment occurs when people 16 or older are seeking, but unable to find, employment. The *labor force* is made up of all people 16 and older who are either employed or seeking work. The *labor force participation rate* is the number of people in the labor force divided by the non-institutionalized adult population.

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b Unemployment is more common among individuals who have less education, experience, or training. It also is more likely to affect young people and minorities. In recent years, the differences in unemployment rates among various groups have declined somewhat.

c There is always some unemployment in the economy as workers move from job to job. Economists have identified four types of unemployment: *frictional, structural, seasonal,* and *cyclical.* Discouraged workers are not counted as unemployed because they are no longer seeking employment.

d Unemployment compensation is paid to workers who lose their jobs through no fault of their own. These benefits usually last for up to 26 weeks. The benefits may reduce the incentive unemployed workers feel to find new jobs.

13.2 Inflation

a *Inflation* is an increase in the economy's general price level. Inflation may be divided into two basic types: *demand-pull* and *cost-push.* Demand-pull inflation results from an increase of aggregate demand. Cost-push inflation results from a decrease of aggregate supply.

b Prior to World War II, inflation in the United States was temporary. Since World War II, there has been sustained inflation that has not been followed by periods of falling prices.

c When people do not expect inflation, they often are harmed when prices increase more than expected. That is because they made agreements based on an expected price level that turns out to be lower than what actually occurs. Higher rates of inflation are associated with higher interest rates.

13.3 Economic Instability

a Before the Great Depression, most economists held a *laissez-faire* doctrine that said the government should not intervene in a market economy. The economic difficulties of the 1930s convinced many people that government intervention in the economy was sometimes necessary for the economy to work well. Keynes suggested that the government should adjust its own spending and taxing to assure that there is sufficient aggregate demand in the economy to sustain production and employment.

b By the 1970s, it was clear that Keynes's theories could not solve all economic problems. In these years, a combination of high rates of unemployment and inflation called *stagflation* occurred. In the 1980s, some economists suggested that stagflation could be reduced or eliminated by implementing government policies that would reduce the costs of production. The tax cuts of 1981–1983 were intended to stimulate investment in the economy. The economy grew nicely from 1983 until 1991. One result of these and later tax cuts, however, was higher federal deficits and growth in the national debt.

13.4 Poverty

a About one in eight people in the United States lives in poverty. Because poverty goes up when unemployment increases, the government's first line of attack in fighting poverty is supporting a vibrant job market. Families with no workers, especially families headed by young unmarried mothers, benefit less than others from a strong job market.

b Income-assistance programs help people who live in poverty, but they also may cause some people not to seek employment. This has caused a long-term dependency on social programs that lead to what has been called a *cycle of poverty. Welfare reforms* passed in 1996 attempted to break this cycle.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** Workers who are overqualified for their jobs or who work fewer hours than they would prefer

_____ **2.** An increase in the economy's price level

_____ **3.** Macroeconomic policy that focuses on shifting the aggregate demand curve as a way of promoting full employment and price stability

_____ **4.** The number of people without jobs who are looking for work divided by the number in the labor force

_____ **5.** Macroeconomic policy that focuses on a rightward shift of the aggregate supply curve through tax cuts or other changes that increase production incentives

_____ **6.** The doctrine that the government should not intervene in a market economy beyond the minimum required to maintain peace and property rights

_____ **7.** Inflation that results from a leftward shift of the aggregate supply curve

_____ **8.** A decline of a nation's output accompanied by a rise in the price level

_____ **9.** Inflation that results from a rightward shift of the aggregate demand curve

_____**10.** Children in welfare families may end up on welfare themselves when they grow up

_____**11.** The interest rate expressed in current dollars as a percentage of the amount loaned; the interest rate on a loan agreement

_____**12.** Occurs when there is no cyclical employment

a. cost-push inflation
b. cycle of poverty
c. demand-pull inflation
d. demand-side economics
e. full employment
f. inflation
g. labor force
h. labor force participation rate
i. laissez-faire
j. nominal interest rate
k. real interest rate
l. stagflation
m. supply-side economics
n. underemployment
o. unemployment benefits
p. unemployment rate
q. welfare reform

Review Economic Concepts

13. Imagine there are 150 million adults in a country. Of these, 45 million adults are not seeking work, and 105 million adults are either working or looking for work. In this case, the labor force participation rate is

a. 40 percent.
b. 70 percent.
c. 30 percent.
d. 60 percent.

14. True or False The labor force is made up of all the people who would like a job but lack employment.

15. Job seekers who lack skills that are demanded by employers are __?__.

16. True or False Interest rates tend to increase when the inflation rate increases.

17. Which of the following events would cause cost-push inflation?
    a. The price of natural gas increases by 20 percent.
    b. The stock market's value grows by 20 percent.
    c. The federal government cuts income taxes by 20 percent.
    d. The amount of grain produced in the United States grows by 20 percent.

18. __?__ inflation is particularly harmful to people in businesses because they are not able to plan for it.

19. __?__ results in higher unemployment and higher inflation.

20. Before the Great Depression, most economists believed that the government should
    a. intervene in the economy when there was a problem.
    b. intervene in the economy only when the federal government had a large debt.
    c. try not to intervene in the economy at any time.
    d. intervene in the economy at all times to make sure there was full employment.

21. **True or False** Poverty is closely associated with unemployment.

22. Which group is not likely to suffer from higher rates of unemployment and poverty than the average for all people?
    a. single parents
    b. minorities
    c. people with limited education
    d. two-parent families

Apply Economic Concepts

Identify Types of Unemployment Identify each of the following as an example of
    A. structural unemployment
    B. cyclical unemployment
    C. seasonal unemployment
    D. frictional unemployment
    E. discouraged worker

23. Rosetta quit her job at the public library to look for a job with better pay.

24. Brandon was laid off from his construction job last December.

25. Peter was laid off from his job at Ford when Ford's sales declined.

26. Serena gave up looking for work after she got no job offers in six months of looking.

27. Walter was laid off from his bookkeeping job after his employer installed a new automated inventory control system.

Calculate the Unemployment Rate Use the data below to calculate

28. the labor force.

29. the labor force participation rate.

30. the number of people who are unemployed.

31. the unemployment rate.

    Total population: 10,000 people

    Non-institutionalized adult population: 7,000 people

    Adults who do not work and are not looking for work: 2,000 people

    People who have employment: 4,750 people

32. **History** Investigate the inflation that took place in Germany after World War I. In 1914, $1 was equal in value to 4.2 marks. By the end of November 1923, $1 had about the same value as 1 trillion marks. What impact did this hyperinflation have on the German economy and German people?

33. **Sharpen Your Skills: Make Inferences** In 1996, U.S. government public-assistance programs were reformed, and limits were placed on the length of time over which people could receive such assistance. How do you think this change has affected single mothers with young children? Do you think that more of these women would have looked for employment after 1996? What impact might this have on the environment in which their children live? Do the data in the table support your answers?

Labor Force Participation Rates for All Adults and for Single Mothers of Children through Six Years of Age, 1980–2000

Year	Labor Force Participation Rate for All Adults	Labor Force Participation Rate for Single Mothers with Children
1980	63.8%	44.1%
1985	64.8%	46.5%
1990	66.5%	48.7%
1995	66.6%	53.0%
2000	67.2%	70.5%

34. **Graphing Inflation** Use data in the table to draw a line graph that shows the rate of inflation in the United States as measured by the Consumer Price Index (CPI). In 1990, prices went up quickly because the cost of energy increased when Iraq invaded Kuwait. Why were interest rates high in 1990?

Rates of Inflation as Measured by the CPI, 1985–2005

Year	Inflation	Year	Inflation	Year	Inflation
1985	3.6%	1992	3.0%	1999	2.2%
1986	1.9%	1993	3.0%	2000	3.4%
1987	3.6%	1994	2.6%	2001	2.8%
1988	4.1%	1995	2.8%	2002	1.6%
1989	4.8%	1996	3.0%	2003	2.3%
1990	5.4%	1997	2.3%	2004	2.7%
1991	4.2%	1998	1.6%	2005	3.5%

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35. Access **EconNews Online** at thomsonedu.com/school/econxtra. Read the policy debate entitled "Do technological advances result in higher unemployment?" Analyze this issue from both points of view, and write a paragraph summarizing each side.

Unit 5



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Public Policy and the National Economy

14 Government Spending, Revenue, and Public Choice

15 Fiscal Policy, Deficits, and Debt

16 Money and Banking

17 Money Creation, the Federal Reserve System, and Monetary Policy

Does the economy function pretty well on its own, or does it need government intervention to keep on track? According to one view, the economy can get off track quite easily, resulting in falling output and rising unemployment. To get the economy moving again, government must step in to boost employment and output. According to another view, the economy is fairly stable on its own. Even when things do go wrong, the economy can bounce back pretty quickly. If this second view is true, not only is government intervention unnecessary, it could do more harm than good.

14 Government Spending, Revenue, and Public Choice

14.1 Public Goods and Taxation

14.2 Federal, State, and Local Budgets

14.3 Economics of Public Choice



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CONSIDER

How does the demand for public goods differ from the demand for private goods?

How are responsibilities divided among levels of government?

How big is the federal budget, and where does the money go?

Why do politicians need to deal with special interest groups?

Why is it hard to interest the public in the public interest?

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14.1 Public Goods and Taxation

Objectives

- Calculate the optimal quantity of a public good.
- Distinguish between the two principles of taxation.
- Identify other government revenue sources besides taxes.

Overview

Competitive markets are marvelous devices, but they are not perfect. They have limitations and shortcomings. For example, firms have little incentive to supply public goods because such goods, once produced, are available to all, regardless of who pays and who doesn't. Because a firm cannot limit the good just to those who pay for it, firms can't earn a profit selling public goods. Governments attempt to compensate for this market failure by supplying public goods and paying for them with taxes. People who don't pay their taxes could go to prison.

Key Terms

benefits-received tax principle

ability-to-pay tax principle

tax incidence

proportional taxation

progressive taxation

regressive taxation

marginal tax rate

In the News

Income Tax Progressivity: How Much Is Enough?

Thanks to recent tax cuts and to increases in the child tax-credit, millions of low- and middle-income families now pay no federal income taxes. In 2004, for example, 42.5 million filers paid $0 in federal income taxes. This amounted to one-third of all tax filers that year. Among tax filers who *do* pay taxes, the marginal tax rate ranges from 10 percent at the low end of taxable earnings to 35 percent at the high end. Thus, tax rates are progressive. Because of this progressivity, the overwhelming share of all income taxes collected comes from high-income households. Some critics of President Bush's tax cuts have charged that most of the tax cuts went to high-income households. But the president cut tax rates across the board, lowering them proportionately more at the lower end. Sixty percent of the tax cuts went to those with incomes less than $100,000. It is true, and always has been, that the marginal tax rate on the super rich is the same as that on the merely rich. For example, the marginal tax rate was 35 percent on all income that exceeded $326,450 in 2005. So someone whose taxable income exceeded that threshold by $1,000,000 would pay taxes of $350,000 on that additional income. Someone whose taxable income exceeded that threshold by $10,000,000 would pay taxes of $3,500,000 on that additional income. In each case, the marginal tax rate is 35 percent, though the higher earner pays ten times more in taxes.

THINK ABOUT IT

Do you think the U.S. personal income tax is progressive enough? What problems could arise if rates are made too progressive?

Sources: Jeanne Sahadi, "Think You Pay a Lot in Taxes," March 7, 2006, CNNMoney.com; and Robert J. Samuelson, "Getting Past Budget Blab," *Washington Post,* February 8, 2006.

Public Goods

You already learned about the market demand for a private good. For example, the market quantity of pizza demanded when the price is $10 is the quantity demanded by Alan plus the quantity demanded by Maria plus the quantity demanded by all other consumers in the pizza market. Because private goods are rival in consumption, the amount demanded at each price is the sum of the quantities demanded by each consumer.

The Demand for Public Goods

A public good is different because it is nonrival in consumption. A public good is available to all consumers in an identical amount. For example, if the town sprays Alan and Maria's neighborhood for mosquitoes for two hours a week, each resident benefits from fewer mosquito bites. Spraying is a public good that spreads through the neighborhood. The market demand for each hour of spraying reflects Alan's marginal benefit plus Maria's marginal benefit plus the marginal benefit to all others in the community.

For simplicity, suppose the neighborhood consists of only two households, one headed by Alan and the other by Maria. Alan spends a lot more time in the yard and therefore values a mosquito-free environment more than Maria does. Maria spends more time away from home. Alan's demand curve, D_a, is shown in the bottom panel of Figure 14.1. Maria's demand curve, D_m, appears in the middle panel. These demand curves reflect the marginal benefits that each person enjoys from each additional hour of spraying.

For example, when the town sprays two hours a week, Maria values the second hour at $5 and Alan values it at $10. To derive the sum of the marginal benefits of that second hour for the neighborhood, simply add up each marginal benefit to get $15, as identified by point *e* in the top panel. By vertically summing up marginal benefits at each quantity, you derive the neighborhood demand curve, *D*, for mosquito spraying.

Note again that the demand for private goods is found by summing quantities *across* consumers at each price. Pizza and other private goods are rival in consumption. A pizza sold to Alan cannot also be sold to Maria. But public goods are nonrival, so any given quantity of mosquito spraying benefits both Alan and Maria. They may value that second hour of spraying differently, but the same quantity is available to each.

Optimal Quantity of the Public Good

How much mosquito spraying should the town government provide? To determine the optimal level of a public good, compare the sum of the marginal benefits of the good with its marginal cost. Suppose the marginal cost of spraying for mosquitoes is a constant $15 an hour, as shown in the top panel of Figure 14.1.

The efficient level of the public good is found where the sum of the marginal benefits equals the marginal cost of providing the good. This occurs where the neighborhood demand curve intersects the marginal cost curve. These two curves intersect at two hours per week. Thus, two hours is the efficient amount of spraying. That's where the marginal benefit enjoyed by the community just equals the marginal cost. If the town sprayed three or more hours per week, the marginal cost would exceed the marginal benefit.

✓ CHECKPOINT

What is the optimal quantity of a public good?

Tax Principles

Two hours per week is the efficient, or optimal, quantity of the public good. How should the government pay for it? Taxes are the source of most government revenue. The way a tax is imposed often is justified on the basis of one of two general principles: the benefits received or the ability to pay.

Ask the Xpert!

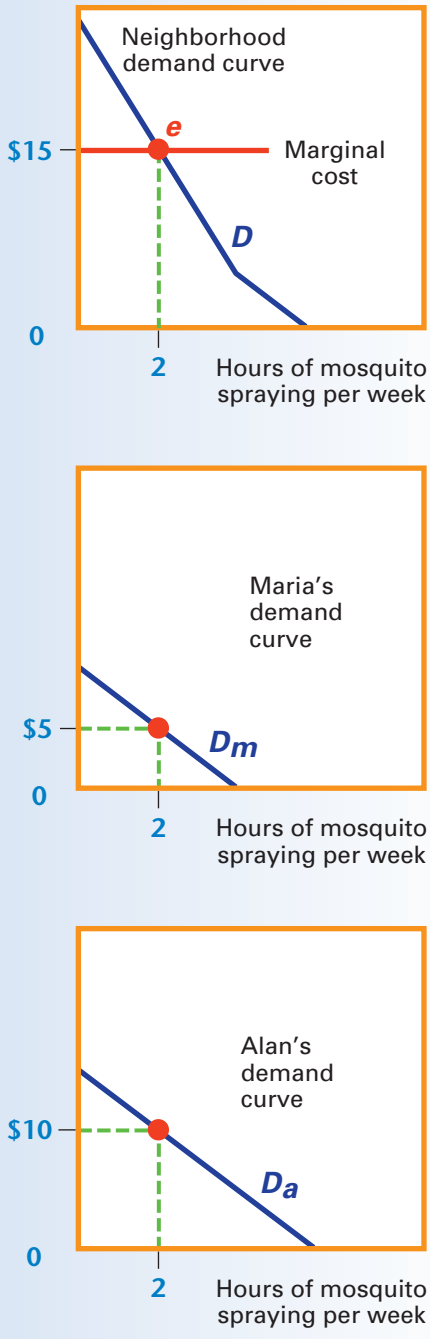
thomsonedu.com/school/econxtra

What is the meaning of public goods?

The Graphing Workshop

Market Demand for a Public Good — **Figure 14.1**

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Because public goods, once produced, are available to all in identical amounts, the market demand for a public good sums up each person's demand at each quantity. In this example, the neighborhood demand for mosquito spraying sums up Alan's demand, D_a, and Maria's demand, D_m. The efficient level is found where the marginal cost of mosquito spraying equals the sum of the marginal benefits. This occurs where the marginal cost curve intersects the neighborhood demand curve, resulting in point e in the top panel. The optimal output is two hours of mosquito spraying per week.

Benefits-Received Taxation

The **benefits-received tax principle** relates taxes to the benefits taxpayers receive from a public good. In the mosquito-spray example, the government would impose a tax on each resident equal to his or her marginal benefit from the good. In this case Alan would pay $10 per hour of spraying, or $20 in all. Maria would pay $5 per hour of spraying, or $10 in all. This seems simple enough, but there are at least two problems with it.

First, once people realize that their taxes are based on how much the government thinks they value the good, they tend to understate their true valuation. Why admit how much you value the good if, as a result, you get hit with a higher tax bill? Therefore, taxpayers are reluctant to offer information about their true valuation of public goods. This creates the *free-rider* problem, which occurs because people try to benefit from the public good without paying for it or by paying less than they think it's worth.

Even if the government has accurate information about how much people value the good, the resulting tax may not seem fair if those who value the good more have lower incomes. In this example, Alan values mosquito spraying more than Maria does because he spends more time in the yard than she does. What if Alan is around more because he can't find a job? Maria is around less because she has a job. Should Alan's taxes be double those of Maria? Taxing people according to their marginal benefit may seem reasonable, but it may not be fair if the ability to pay differs sharply across taxpayers.

benefits-received tax principle
Those who receive more benefits from the government program funded by a tax should pay more of that tax

Ability-to-Pay Tax Principle

The second approach to taxes is based on the **ability-to-pay tax principle**. Those

ability-to-pay tax principle
Those with a greater ability to pay, such as those with a higher income, should pay more of a tax

e-conomics

LIBRARY INTERNET ACCESS FOR SOME BUT NOT ALL?

You head for the nearest public library to do research on human anatomy for your science project. Sitting down at a computer Internet station, you type in a search request. Unfortunately, when you try to access what you hope will be a useful site, access is blocked by the library's pornography-filtering system. You talk to a librarian about getting the material, but the librarian responds that, unlike adults, minors are not empowered by federal law to have the filters removed at their request. Your situation reflects a choice that was made by the library under the Children's Online Protection Act. Under the Act, if the library wants to receive federal money supporting Internet access for its patrons, it must agree to install the filters and to enforce the rules surrounding their use. In mid 2004, however, the U.S. Supreme Court, as a result of a challenge by libraries, their patrons, web-site publishers, sex educators, artists, and other legitimate interests, approved an order by a lower federal court that stopped enforcement of the Act.

THINK CRITICALLY

Is Internet access at the library a public good? Do you think Internet access at the library should be available to adults and minors alike with no restrictions? Why or why not?

Sources: Came Kirby, "Feds Cast a Wide Net with Subpoenas," *San Francisco Chronicle,* March 31, 2006; John Adamson, *Law for Business and Personal Use,* Thomson South-Western, 2006.

with a greater ability to pay are taxed more. In the mosquito-spray example, Maria would pay more taxes because she has the greater ability to pay. For example, Maria might pay twice as much as Alan. Income and property taxes usually rely on the ability-to-pay approach. The ability-to-pay tax principle focuses more on taxpayer's income or wealth than on the taxpayer's benefit from the public good. Maria might not think the tax is fair, because she is paying twice as much as Alan even though she values the good only half as much as he does. Neither the ability-to-pay tax principle nor the benefits-received tax principle can be said to be absolutely fair in all circumstances.

Public goods are more complicated than private goods in terms of what goods should be produced, in what quantities, and who should pay. These decisions are sorted out through public choices, which are examined later in the chapter.

tax incidence
Indicates who actually bears the burden of a tax

✓CHECKPOINT

What are the two principles of taxation?

Other Revenue Issues

Taxes provide most revenue at all levels of government. The federal government relies primarily on the personal income tax. State governments rely on income and sales taxes. Local governments rely on the property tax. In addition to taxes, other revenue sources include (1) aid from higher levels of government; (2) user fees, such as highway tolls; (3) fines, such as speeding tickets; and in some states (4) monopoly profits from selling certain goods not legally available elsewhere, such as lottery tickets and liquor. If revenues fall short of expenditures, governments cover the resulting deficit by borrowing from the public.

Tax Incidence

Tax incidence indicates who actually bears the burden of the tax. One way to evaluate tax incidence is by measuring the tax as a percentage of income. Under **proportional taxation**, taxpayers at all income levels pay the same percentage of their income toward that tax. A proportional income tax is also called a *flat tax,* because the tax as a percentage of income remains constant, or flat, as income increases.

Under **progressive taxation**, the percentage of income paid in taxes increases as income increases. The federal income tax and most state income taxes are progressive, because tax rates increase as taxable income increases.

Finally, under **regressive taxation**, the percentage of income paid in taxes decreases as income increases, so the tax rate declines as income increases. For example, Social Security taxes in 2006 collected 6.2 percent of the first $94,200 of a workers' earnings. The tax rate imposed on income above that level dropped to zero. The average tax rate declines as income increases above $94,200.

Marginal Tax Rate

The **marginal tax rate** indicates the percentage of each additional dollar of a taxpayer's income that goes to taxes. High marginal rates reduce the after-tax income from working, saving, and investing. Therefore, high rates can reduce people's incentives to work, save, and invest. As of 2006, there were six marginal rates for those who must pay federal income taxes, ranging from 10 percent to 35 percent, depending on income. Millions of low-income households pay no income taxes. Because of the earned-income tax credit, more than 20 million people with low earnings receive tax refunds that exceed the amount paid in.

Federal income tax rates are, therefore, progressive. Figure 14.2 shows the top marginal tax rate on federal personal income taxes since the tax was introduced in 1913. Note that most recently the highest rate was relatively low by historical standards. Still, the top 10 percent of tax filers, based on income, pay about two-thirds of all federal income taxes collected.

Pollution Taxes and Sin Taxes

At times, taxes and fines are imposed to discourage certain activities. For example, government may impose a tax or a fine on pollution emissions. Fines for littering, disturbing the peace, and having a defective muffler are designed to reduce these externalities. To discourage activities deemed socially undesirable, governments also impose *sin taxes* on cigarettes, liquor, and legal gambling.

User Fees

Sometimes the government can easily exclude those who don't pay for a good and so can charge a user fee. For example, states charge entrance fees to state parks and tuition to state colleges. Those unwilling to pay are not admitted. User fees are just like prices for private goods except that the user fees often do not cover the full cost.

proportional taxation

The tax as a percentage of income remains constant as income increases; also called a *flat tax*

progressive taxation

The tax as a percentage of income increases as income increases

regressive taxation

The tax as a percentage of income decreases as income increases

marginal tax rate

The percentage of each additional dollar of income that goes to pay a tax



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Why would the local government of this beach town impose a $1,000 fine for littering?

Borrowing

Governments sometimes borrow from households and firms to fund public programs. Government borrowing can be justified for capital projects that increase the economy's productivity—investments such as highways, airports, and schools. The cost of these capital projects should be borne in part by future taxpayers, who also will benefit from these investments. Governments also borrow when revenues fall short of expenditures. Borrowing by the federal government will be examined in the next chapter.

TeamWork

Working in groups of three, brainstorm a list of user fees—other than those listed in the text—that you might have to pay. Share your results with the rest of the class.

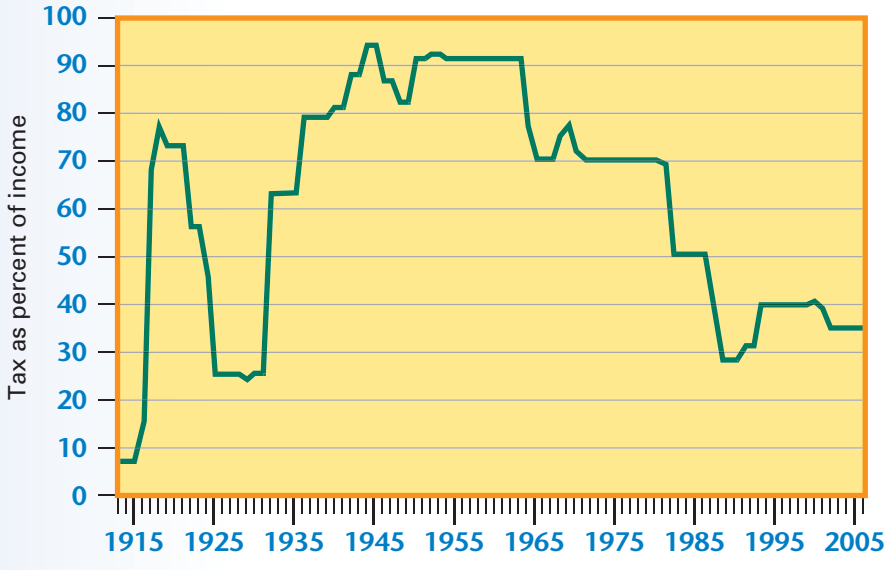
✓CHECKPOINT

What are the other revenue sources besides taxes?

Top Marginal Tax Rate on Personal Income, 1913–2006 — **Figure 14.2**

The top marginal tax rate for the federal personal income tax has fluctuated during the last century. The top 10 percent of tax filers, based on income, pay about two-thirds of all federal income taxes collected.

Source: U.S. Internal Revenue Service.



Assessment 14.1

Key Concepts

Xtra! Study tools

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1. Why isn't a campsite you rent in a national park a perfect example of a public good?
2. Suppose your town council has determined that it would need to spend $1 million to repave and widen the road that leads to your school. How should council members decide whether to undertake this project?
3. Why isn't it logical for the government to pay for a welfare program by imposing a *benefits-received principle* tax?
4. Why aren't property taxes, particularly for older people, always examples of *ability-to-pay principle* taxes?
5. Why is it difficult for people to agree on a tax structure that is fair for all?
6. How willing would you be to work 10 hours next week at a local store to earn $100? If $25 of your earnings were taken to pay taxes, what would happen to your willingness to work? What if $50 or $75 were taken? How does this example demonstrate the importance of the marginal tax rate to production in the economy?

Graphing Exercise

7. Many residents of Oakwood, a small town, have asked to have the town's swimming pool kept open for eight hours each day during the summer instead of only six hours. The cost of operating the pool is $80 per hour. Draw a graph that shows the efficient level of swimming-pool hours per day to be eight hours. The marginal cost should be shown by a horizontal line that hits the vertical axis at $80. The sum of the marginal benefit or demand curve should slope downward from left to right and intersect the marginal cost above eight hours of daily operation. Explain how your graph demonstrates that this is the optimal quantity of this public good.

Think Critically

8. **Math** Patty is a loan officer for a bank. She earns $80,000 per year and drives a new Jaguar. Tony is a night janitor who works for the same bank. He earns $20,000 per year and drives an old Ford. Both Patty and Tony buy 1,000 gallons of gasoline for their cars each year. The tax per gallon of gasoline is $0.50. How much does each person pay in gasoline tax? What percent is this payment of each person's income? Is the tax on gasoline proportional, progressive, or regressive? Explain how you know.

Sharpen Your Skills



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Apply Math Skills

To make rational decisions, people need to quantify and evaluate the costs and benefits of alternative choices they might make. This can be seen in choosing among job offers you might receive when you finish your education. Taking a job that pays a high wage may not be your best financial choice if it is located in a city that has high taxes and costs of living. A lower wage could provide you a better standard of living in a different community. Study the two job offers described below. Then use your math skills to answer the questions that follow.

Job A in Florida

- You would work as an assistant manager in a retail clothing store.
- Your salary would begin at $23,000 per year.
- There is no state income tax in Florida.
- The sales tax in Florida is 7%.
- You can rent an apartment you like for $550 per month.
- You won't need to pay high heating costs, but your air conditioning could cost as much as $200 per month during the six months of warmer weather.

Job B in New York State

- You would work as an assistant manager in a jewelry store.
- Your salary would begin at $28,000 per year.
- You would pay state income tax at an average rate of 5 percent.
- The sales tax in New York is 8.25%.
- You can rent an apartment you like for $675 per month.
- You would expect to pay an average of $75 per month to heat your apartment during the six months of colder weather and $40 per month to air condition it in summer.

Apply Your Skill

1. How much state income tax would you pay in each state?
2. If you spent $8,000 buying products that are subject to sales tax, how much would you pay in tax in each state?
3. How much would you pay per year to rent an apartment in each state?
4. How much would you pay per year to heat or cool your apartment in each state?
5. How much more per year would taxes and costs of living be in New York than in Florida?
6. Why do you think many people have moved from higher-tax states to lower-tax states in recent years?

14.2 Federal, State, and Local Budgets

Objectives

- Identify the top spending category in the federal budget and the top source of revenue.
- Identify the top spending category in state budgets and the top source of revenue.
- Identify the top spending category in local budgets and the top source of revenue.
- Compare the size of government here and abroad.

Overview

The United States has a federal system of government, meaning that responsibilities are shared across levels of government. State governments grant some powers to local governments and surrender some powers to the national, or federal, government. As the system has evolved, the federal government has assumed primary responsibility for national security and the stability of the economy. State governments fund public higher education, most prisons, and—with grants from the federal government—highways and welfare. Local governments are responsible mainly for local schools, though much funding for this comes from the state government.

Key Terms

government budget

payroll taxes

In the News

Erasing Federal Budget Deficits Calls for Painful Choices

Each year Congress debates an unbalanced budget submitted by the president. U.S. government spending accounts for about 20 percent of GDP, and revenues account for about 17.5 percent relative to GDP. The government must borrow to make up the shortfall. Americans continue to want government services, but they dislike taxes. A balanced budget forces choices that politicians and voters do not like. Tax increases have little support. Cutting government programs also is difficult. Thus, elected officials who propose a balanced budget face a political minefield. To balance the budget, the government would have to cut everything except programs like Social Security, Medicare, Medicaid, and unemployment insurance by 1.5 percent of GDP. Defense, education, environment, and transportation would be among the areas cut. Increases in eligibility ages for Social Security or reducing benefits for retirees are just two of the changes that are unpopular, if not impossible, politically. In a recent round of cutting, Congress managed to cut $39 billion in projected spending. That sounds like a lot but it amounts to only 3/10ths of 1 percent of GDP.

THINK ABOUT IT

One politician famously said, "Don't tax you, don't tax me, tax that man behind the tree." What does that quote say about our willingness politically to reduce the budget deficit?

Sources: Douglas Holtz-Eakin, "Look Out! Here Comes Yet Another Unrealistic Budget," *Washington Post,* February 5, 2006; Robert J. Samuelson, "Getting Past the Budget Blab," *Washington Post,* February 8, 2006.

Federal Budgets

government budget
A plan for government spending and revenues for a specified period, usually a year

A **government budget** is a plan for spending and revenues for a specified period, usually a year. The word *budget* derives from the Old French word *bougette,* meaning "little bag." The federal budget now exceeds $2,700,000,000,000—$2.7 trillion a year. If this "little bag" contained $100 bills, it would weigh more than 30,000 *tons!* These $100 bills could cover a 16-lane highway stretching from northern Maine to southern California.

Federal Spending

One way to track the impact of government spending over time is to compare that spending to the U.S. gross domestic product, or GDP. In 1929, the year the Great Depression began, government spending at all levels totaled about 10 percent of GDP. Local government spending accounted for about half that total. The federal government played a minor role in the economy. In fact, during the nation's first 150 years, federal spending, except during war years, never exceeded 3 percent relative to GDP.

The Great Depression, World War II, and a change in economic thinking have boosted government spending, particularly at the federal level, to 32 percent of GDP most recently. The federal portion totals 20 percent and state and local governments, 12 percent. Thus, since 1929, government spending has more than tripled as a share of GDP, and the federal portion has increased nearly sevenfold.

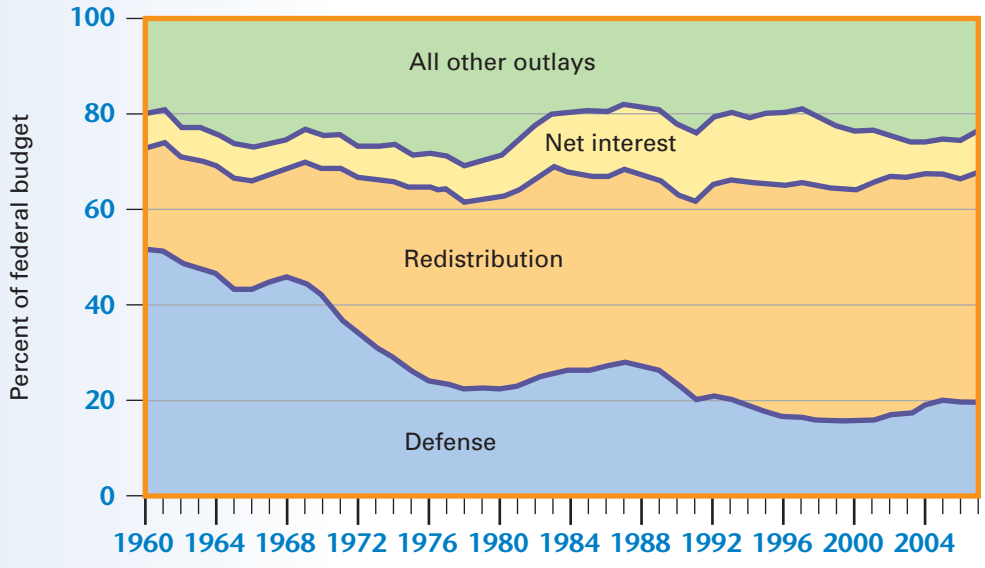
Figure 14.3 shows the share of federal spending by major category since 1960. The share of the budget going to national defense fell from 52 percent in 1960 to only 20 percent in 2007. Redistribution, which consists largely of Social Security, Medicare, and welfare, grew steadily as a share of the total, climbing from 21 percent in 1960 to 48 percent in 2007. In 1960, the federal government focused primarily on national defense. By 2007, spending had shifted to income redistribution.

Interest payments on the federal debt stood at 8 percent of the budget in 1960, grew during the middle years, and then declined (thanks to low interest rates) to 9 percent by 2007. Spending on all other programs, from federal prisons to the environment, went from 20 percent in 1960 to 24 percent in 2007.

Composition of Federal Spending Since 1960 — **Figure 14.3**

As a share of the federal budget, defense spending has declined and redistribution has increased since 1960.

Source: *Economic Report of the President,* February 2006, Table B-81. Figures for 2006 and 2007 are projections.



Federal Revenue

During its first century, the federal government raised most of its revenue from taxes on imports, taxes on specific goods, and property taxes. All that changed with the Sixteenth Amendment to the U.S. Constitution. This empowered Congress to levy a tax on personal income. The personal income tax was introduced in 1913. The tax originally affected only the top 10 percent of households based on income. Rates were raised during World War II to help pay for the war. Since then the personal income tax has remained the primary source of federal revenue.

Figure 14.4 shows the composition of federal revenue since 1960. The personal income tax fluctuated from 42 percent to 50 percent of the total during the period. Income tax cuts in 2001 and 2003 reduced income taxes as a share of all revenue from 50 percent in 2001 to 45 percent in 2007, which was about the same as in 1960.

The share coming from payroll taxes more than doubled from 15 percent in 1960 to 37 percent in 2007. **Payroll taxes** are deducted from paychecks to support Social Security, which is a retirement program, and Medicare, which funds medical care for the elderly. The abbreviation *FICA* on your paycheck stub refers to these payroll taxes. FICA stands for the Federal Insurance Contributions Act. Corporate income taxes and all other revenue have declined as a share of the total from 40 percent in 1960 to 18 percent in 2007.

Note that Figure 14.4 shows the composition of revenue sources and ignores borrowed funds. Most years the federal government spends more than it takes in and makes up the difference by borrowing from the public. This is discussed in the next chapter.

NET Bookmark

Access the current fiscal year's federal budget document through thomsonedu.com/school/econxtra. Click on the link to the current year's budget. Choose one topic in the Table of Contents for the budget. Go to that page, read the information, and then write a paragraph explaining how the topic relates to the budget.

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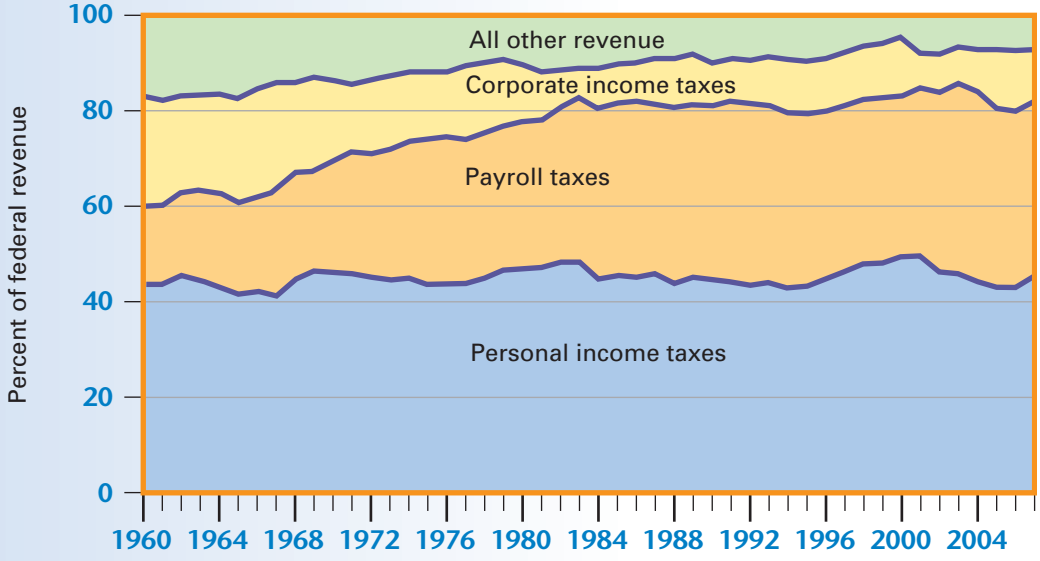
payroll taxes
Taxes deducted from paychecks to support Social Security and Medicare

Ask the Xpert!

thomsonedu.com/school/econxtra

Why do we keep the income tax if it is so unpopular?

Composition of Federal Revenue Since 1960 — **Figure 14.4**



Payroll taxes have grown as a share of federal revenue since 1960. Personal income taxes have changed little as a share of the total.

Source: Based on fiscal year revenue figures from the *Economic Report of the President*, February 2006. Figures for 2006 and 2007 are projections.

✓CHECKPOINT

What is the top spending category in the federal budget and the top source of revenue?

State Budgets

You already know something about state government. You travel on state roads, visit state parks, and may be planning to attend a state college. State regulations dictate how old you must be to get a driver's license, how fast you may drive on most roads, and how many days a year school is in session. You pay state excise taxes on certain items, including gasoline and movie tickets. If you earn a paycheck, you may pay state income taxes. You also may pay state sales taxes on most purchases. From the department of motor vehicles to the department of education, state government affects your life in many ways.

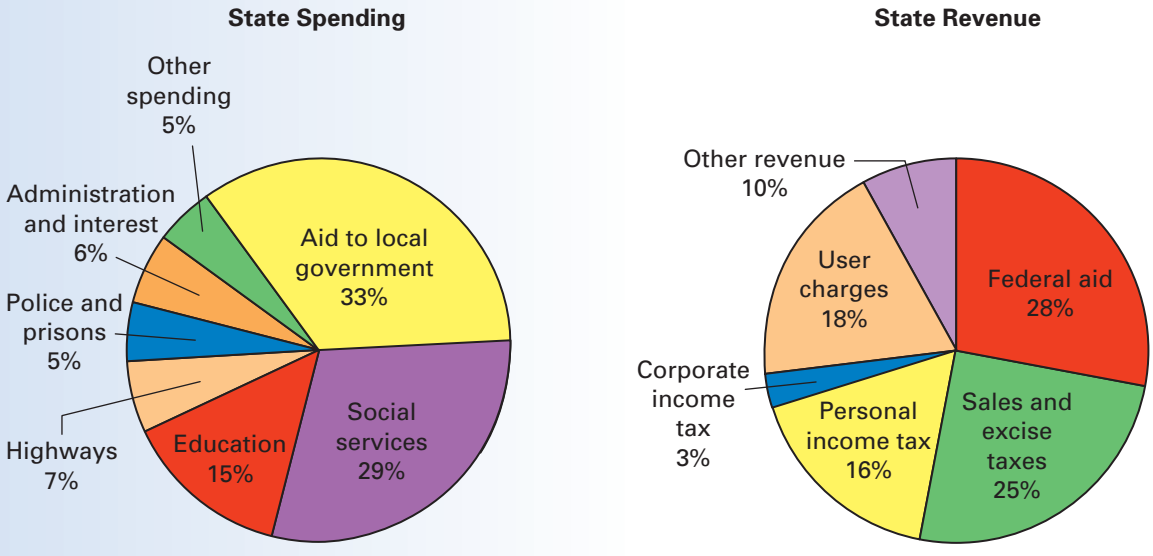
State Spending

The pie chart on the left of Figure 14.5 shows the composition of state spending. The biggest chunk, 33 percent of the total, goes toward aid to local governments, mostly to help pay for schools. The next biggest share, 29 percent, consists of spending on social services, including welfare payments. Most welfare spending funds medical care for the poor, especially elderly in nursing homes. Education ranks third at 15 percent of the total. The remaining 23 percent pays for highways, state police, prisons, interest on state debt, administration, and other state activities.

State Revenue

The right pie chart in Figure 14.5 shows the sources of state revenue. The largest source, 28 percent of the total, is aid from the federal government, which covers more than half of state welfare costs. The second largest source, sales and excise taxes, makes up 25 percent of state revenue. Sales taxes collect a percentage of the sales price for broad categories of goods. All but five states impose a sales tax, with rates ranging from 3 percent to 7 percent of the selling price. Does your state have a sales tax? If so, what's the tax rate and how broad is the tax? Excise taxes apply to specific goods such as cigarettes and gasoline, which are taxed in all states.

Composition of State Spending and State Revenue — **Figure 14.5**



The biggest portion of state spending goes toward aid to local governments. The largest source of state revenue is aid from the federal government.

Source: Based on general expenditure figures for fiscal year 2003 from the U.S. Census Bureau.



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A small portion of a state's budget funds the prison system. What is the top spending category for state government?

Investigate Your Local ECONOMY

Research to find out the size of your local government's budget and how much of this budget is spent on local schools. What are the other items in the budget, and how much is spent on each item? Present your findings in a pie chart.

The third largest source of state revenue is user fees, making up 18 percent of the total. Examples include admissions to state campgrounds and tuition at state colleges. The state personal income tax ranks fourth, accounting for 16 percent of state revenue. All but eight states impose an income tax, and most have progressive rates.

✓CHECKPOINT

What is the top spending category in state budgets and the top source of revenue?

Local Budgets

Of all government levels, you may be most familiar with the local one. You may be attending a public school. You may get to school in a government-funded bus on roads maintained by local government and patrolled by local police. Local schools decide school hours, what you may wear to school, and when you eat lunch. You may stroll on city sidewalks to visit city parks or the local library. Your family pays property taxes either directly as property owners or indirectly as part of the rent. Your family also may pay user fees for water, garbage collection, parking, and other local services.

Local Spending

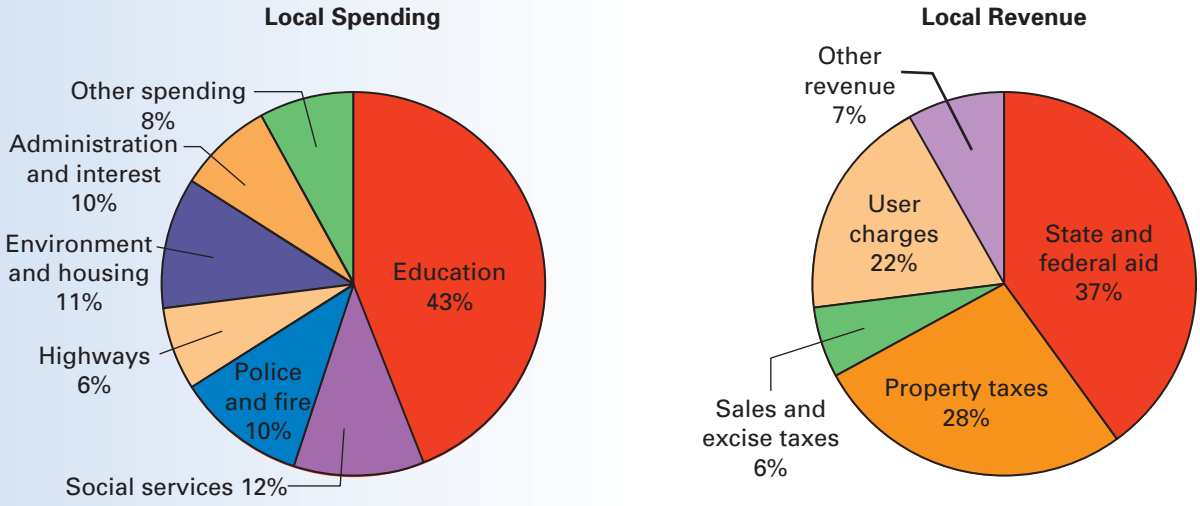
Before the Great Depression, local government accounted for half of all government spending. However, the growing importance of the federal government has reduced the local share to one-sixth of the total. The left pie chart in Figure 14.6 shows the composition of local spending. No other spending category comes close to education, which accounts for 43 percent of the total. Social services rank a distant second at 12 percent. Environment and housing combine for 11 percent and third place.

Local Revenue

As the right-hand pie chart in Figure 14.6 shows, state and federal aid make up 37 percent of local revenue, by far the largest source. Most of this aid goes toward local schools. Local governments raise from their own sources only about $6 out of every $10 they spend. The property tax accounts for 28 percent of local revenue. User fees rank third at 22 percent. Examples include fees for water usage, parking meters, and school lunches.

Composition of Local Spending and Local Revenue

Figure 14.6



The largest category of local spending is education. State and federal aid make up the largest category of local revenue.

Source: Based on general expenditure figures for fiscal year 2003 from the U.S. Census Bureau.

✓CHECKPOINT

What is the top spending category in the local budget and the top source of revenue?

Relative Size and Growth of Government

So far, the focus has been on each level of government, but a fuller picture includes all three levels. How has the size



Nearly half of local spending goes to schools. What spending categories might be included in a local school district's budget?

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of government in America changed in recent years, and how does that size compare with what's been going on in other major economies around the world?

An International Comparison

Figure 14.7 shows government outlays at all levels relative to GDP in 10 industrial economies for 1993 and 2007. Government outlays in the United States in 2007 were 37 percent relative to GDP, the second smallest share in the group. This is down slightly from 38 percent in 1993, a year when only Japan among the 10 industrial economies had a smaller government share.

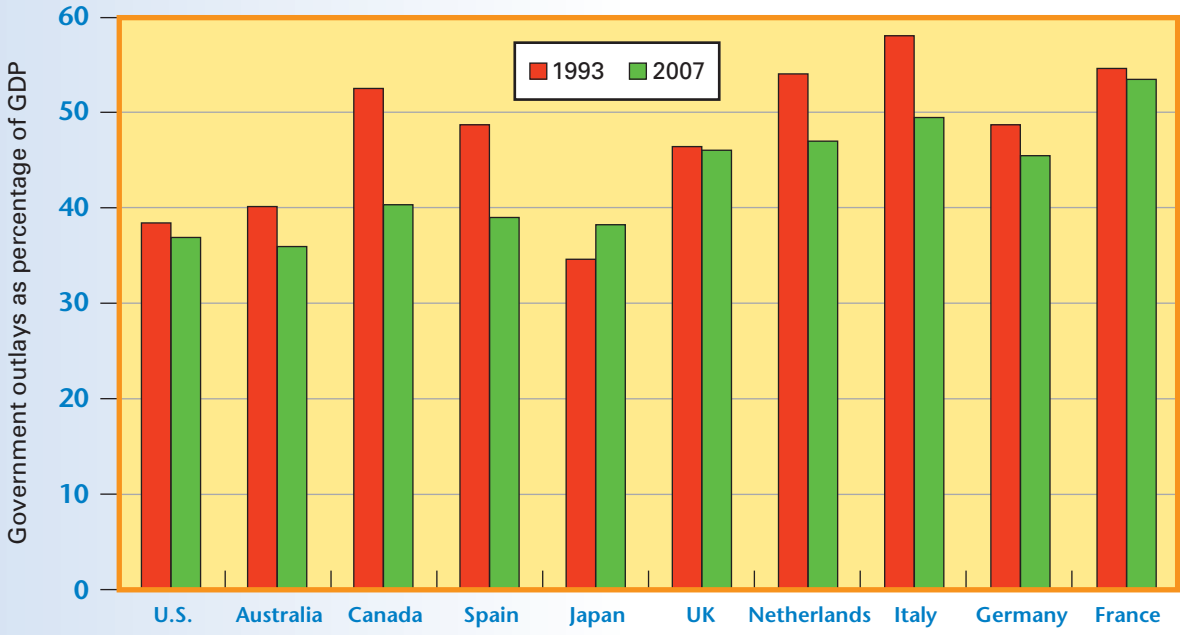
Between 1993 and 2007, government outlays relative to GDP decreased in 9 of the 10 industrial economies. The average dropped from 47 percent to 44 percent. Why the drop? The breakup of the Soviet Union in the early 1990s reduced defense spending in major economies. The poor performance of most socialist economies around the world shifted voter attitudes more toward private markets, thus lessening the role of government. Growing prosperity of market economies during most of the period made it less necessary for governments to stimulate their economies or provide social services to their people.

The world economy began to sour beginning in 2001. The terrorist attacks on America temporarily stalled the trend toward a shrinking government. Government stepped up spending to fight terrorism and help revive the economy.

✓ CHECKPOINT

How did the size of the U.S. government change between 1993 and 2007 compared with other major economies?

Government Outlays as Percentage of GDP — **Figure 14.7**



Government outlays as percentage of GDP declined between 1993 and 2007 in major industrial economies except Japan.

Source: Based on outlays at all government levels as reported in *OECD Economic Outlook,* December 2005, Annex Table 25. Figures for 2007 are projections. Note that the *OECD* uses a broader definition of government outlays, so the U.S. outlay figure reported here is higher than the 32 percent reported earlier in the chapter.

Span the Globe

Why Japan Is Different

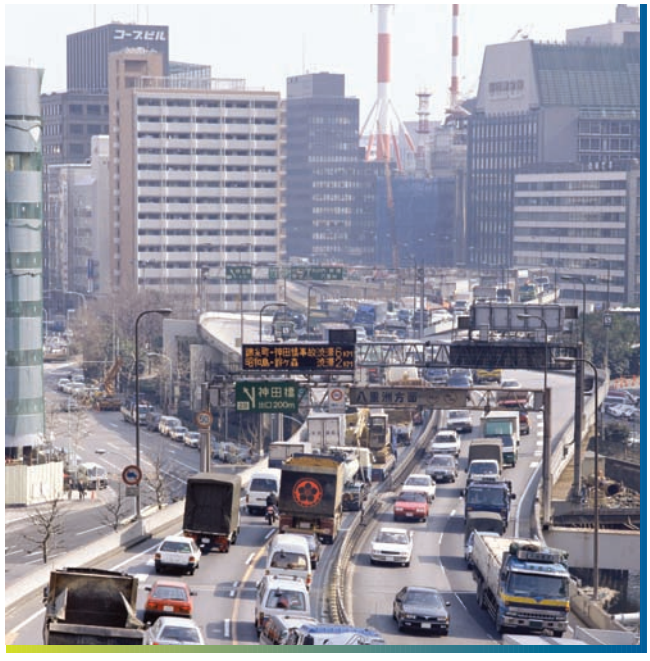
The exception to the trend shown in Figure 14.7 towards a smaller GDP share for government outlays is Japan, where the economy suffered for more than a decade. The troubles began with a collapse in real estate values and stock prices in 1990. The crash of these two sources of wealth crushed consumer confidence and greatly diminished Japanese banks' ability to make loans. With consumers unwilling to spend as much, the government tried to stimulate aggregate demand by increasing spending on government projects. However, despite this effort, the economy remained stagnant and the unemployment rate more than doubled. By late 2002, the government tried a new tack. It decided to increase consumer demand directly through government loans that rewarded companies that hired the unemployed. Whether that program can be credited with a turnaround remains unclear, but after that, consumer confidence and the economy began to revive. As a result, Japan's GDP broke its long streak of minimal or negative growth by expanding at a moderate rate in both 2004 and 2005. Still the question remains: Does the recent growth reflect a turnaround in the Japanese economy or merely a short-term spurt for an otherwise dead economy?

THINK CRITICALLY

According to a *Wall Street Journal* editorial, "Japan is stuck in an awkward stage of development between two worlds. . . . The government can no longer solve Japan's problems, but effective market mechanisms have yet to take over." What does this statement suggest must happen in Japan in order for its economy to continue to improve?

Sources: David Sax, "Land of the Rising Sun," *Canadian Business,* April 10, 2006; James K. Glassman, "The Sun Finally Rises," *Kiplinger's Personal Finance,* April 2006; Emily Parker, "Japan Needs an Exit Strategy," *Wall Street Journal,* October 15, 2003.

Japan's growth in the 1980s was driven by government-directed industrial policies. Some politicians in Japan think that these economic policies, mired in bureaucracy, need to be reformed and the country moved toward a more entrepreneurial system. One area where reform is needed is the Japan Highway Corporation, which spends trillions of yen on what some critics charge are wasteful projects.



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Assessment 14.2

Key Concepts

1. Why were most Americans willing to accept a larger role for the government in the economy during the Great Depression and World War II?
2. Why would the share of federal tax revenue that comes from personal income taxes change from year to year even if the income tax rates remained unchanged?
3. Why is state revenue more responsive to the growth in personal income than is local revenue?
4. Why have some state courts ruled that funding public schools from local property tax receipts results in unequal educational opportunities for school children?
5. Why do governments in countries that experience rapid economic growth often spend smaller portions of GDP?

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Graphing Exercise

6. Since its creation in 1965, the Medicare program that provides medical coverage for our nation's elderly has claimed a growing proportion of GDP. Use data in the table to construct a double line graph that shows the rates of growth of real federal Medicare payments and of real GDP from 2001 through 2005. What does your graph show about the relative rates of growth in these amounts in these years? Given the large number of people born during the baby boom years from 1946 through 1964, what will happen to the relationship between these amounts in future years?

Real Growth in Federal Medicare Payments and GDP, 2000–2005

Year	Growth in Real Medicare Payments	Growth in Real GDP
2001	7.5%	0.8%
2002	4.6%	1.6%
2003	5.7%	2.7%
2004	5.3%	4.2%
2005*	6.4%	3.5%

*Values for 2005 are projections.
Source: *Economic Indicators,* May 2006, pp. 2, 23, and 33.

Think Critically

7. **Government** An important part of state government spending is governed by federal laws that require state governments to provide Medicaid programs for people who are unable to pay for their own medical care. Investigate Medicaid spending in your state. Have these payments grown more rapidly than other types of state government spending? What could explain the growth in your state's Medicaid payments?

CONNECT TO **HISTORY**



The Evolution of the Income Tax

One trigger for the American Revolution was a tax revolt. It was through trade that England lightly taxed its American colonies. When England attempted to impose an internal tax through the Stamp Act, the American colonists reacted against the government's attempt to impose taxes on them. They saw it as a violation of the British Bill of Rights, which historically had held that taxes could not be imposed without the approval of Parliament. Because the colonies had no direct representation in Parliament, they rejected the government's right to tax them directly.

Following the Revolution, the first American constitution, the Articles of Confederation, did not grant the central government the power to levy taxes. Therefore, taxation was one of the problems addressed at the Constitutional Convention held in Philadelphia. Through the U.S. Constitution, the new government was given the power to "lay and collect Taxes, Duties, imports, and Excises."

During the nation's early days, the federal government relied primarily on tariffs (taxes on imports) and land sales to fund its operations. An early attempt to increase revenue by levying excise taxes on items such as carriages, sugar, salt, and distilled spirits met with armed resistance in Western Pennsylvania. The "Whisky Rebellion" was quickly put down. However, with the election of Thomas Jefferson in 1800, most of the excise taxes were repealed.

The government returned to relying on tariffs for revenue until outlays for the Civil War required new sources of revenue. The nation's first income tax was imposed during that war, along with taxes on a variety of goods. Following the war, the high tariffs imposed during the war remained. However, the income tax was first cut and then allowed to expire by 1872.

In the 1890s, the idea of an income tax resurfaced, and a new income tax was passed in 1894. The following year, the Supreme Court declared it unconstitutional. A decade later, following the Panic of 1907, a federal income tax once again emerged as an issue. President William Howard Taft, not wanting to directly challenge a Supreme Court decision, suggested a constitutional amendment authorizing an income tax. He also suggested a tax on corporate profits. The corporate profits tax passed a Supreme Court challenge, and Congress and the states passed the Sixteenth Amendment, which was adopted in 1913. Later that year, President Woodrow Wilson signed the personal income tax into law.

The tax burden from the income tax fell on the wealthy. In its first year, only 357,598 tax forms were filed, or about one filing for every 250 people. In 1910, the tariff on imported goods supplied 90 percent of the government's revenues. Today that figure is about one percent. Where previously the debate over tariffs pitted regions of the country against each other, today the argument is more between economic classes. The top 10 percent of taxpayers based on income pay 67 percent of all income taxes collected, and the bottom 50 percent of taxpayers pay less than 5 percent of all income taxes collected.

THINK CRITICALLY

A century ago the United States underwent a fundamental change in how it funds the government—from relying on tariffs to relying on personal and corporate income taxes. Could the country undergo such a change today? What alternate forms of taxation could it employ?

14.3 Economics of Public Choice

Objectives

- Discuss how representative democracy may favor special interests at the expense of the public interest.
- Distinguish between bureaus and firms, and explain why bureaus might be less responsive to customers than firms are.

Overview

This book, for the most part, has assumed that governments make optimal adjustments to the shortcomings of the private sector. In other words, when confronted with market failure, governments adopt just the right program to address the problem. However, there are limits to government's effectiveness, just as there are limits to the market's effectiveness. For example, elected officials sometimes may side more with special interests than with the public interest. Government bureaus usually get less consumer feedback and face less competition than private firms do.

Key Terms

maximizing political support

rational ignorance

bureaus

In the News

Much Ado about Earmarks

Earmark: A narrowly focused budget appropriation for projects such as a particular road or a park in a specific town. Once rarely used or publicly discussed, they are now common in the federal budget.

In the decade following 1994 the use of earmarks in the federal budget grew from 4,155 (worth $29 billion) to 14,211 (worth $53 billion). The most famous earmark in recent years was Alaska's $223 million "Bridge to Nowhere." It was one of more than 6,300 earmarks put into a $286 billion transportation bill. Now viewed as one source of federal deficits, these wasteful "pork" earmarks have become targets of Congressional reform. While most in Congress agree that the use of earmarks needs reform, politicians hesitate to eliminate them completely. As some members of Congress see it, earmarks are the only way Congress can exercise its constitutional duty. The Constitution gives the power to allocate spending to Congress, not the President. Without earmarks the President, who controls the federal agencies, could steer funds to programs he favors. What some observers find is that decisions about specific earmarks are supposed to be part of the public debate. In practice, however, most earmarks are never considered openly but are quietly attached to other legislation. This fuels public suspicion that earmarks are not for the good of the country but instead are sometimes approved in return for political favors.

THINK ABOUT IT

If Congress reduces or eliminates the use of earmarks, will it give too much spending power to the executive branch? Explain your answer.

Sources: Jeffrey H. Birmbaum, "Earmark—It's $$$, Not Body Art," *Washington Post,* February 3, 2006; Al Kamen, "Pork: Good Enough for Jefferson, and You," *Washington Post,* March 17, 2006.

Representative Democracy

maximizing political support
The objective assumed to guide the behavior of elected officials; comparable to profit maximization by firms and utility maximization by households

In market decisions, each person votes with dollars for what gets produced. The rule is: one dollar, one vote. People with more to spend get more votes and have more influence. In public decisions, each person has a single vote to decide what gets produced. The rule is: one person, one vote, regardless of income. People vote directly on public choices at New England town meetings and on the occasional referendum, but direct democracy is unusual. When you consider the thousands of public choices required to run a government, it would be impractical for voters to make all those choices. Instead, voters elect representatives, who—at least in principle—make public choices that reflect constituent views. Delegating choices to representatives involves complications, however.

Maximizing Political Support

Economists assume that households try to maximize their utility and firms try to maximize profit, but what about governments—or, more specifically, what about elected representatives? What do they try to maximize? One problem is that the U.S. system of federal, state, and local governments consists of not one government but more than 87,000 separate governments in all. These range from a local school district to the federal government.

What's more, even a particular government does not act as a single, consistent decision maker. For example, the federal government relies on a system of checks and balances to limit the executive, legislative, and judicial branches.

Even within the federal executive branch, the many agencies and bureaus seem at times to work at cross-purposes. For example, for decades the U.S. Surgeon General has required health warnings on cigarette packages. During that same time, however, the U.S. Department of Agriculture has been subsidizing tobacco farmers.

To simplify this tangled web, economists assume that elected representatives try to maximize their political support, including votes and campaign contributions. In this theory, **maximizing political support** guides the decisions of elected officials who, in turn, direct government employees.

Role of Special Interest

Elected representatives often appear to cater to special interests rather than the public interest. Consider only one of the thousands of decisions made by elected representatives: funding an obscure federal program that subsidizes U.S. wool production. Under the wool-subsidy program, the federal government guarantees sheep farmers a certain price for each pound of wool they produce. This subsidy in some years has cost taxpayers more than $75 million. During deliberations to renew the program, the only person to testify before Congress was a representative of the National Wool Growers Association, who claimed that the subsidy was vital to the nation's economic welfare. Why didn't a single taxpayer challenge the subsidy?

As a consumer, you do not specialize in woolen goods. You buy thousands of different goods and services, from software to underwear. You have no special interest in wool legislation. Wool producers do have a special interest, because that's how they make a living. As a result of this mismatch of interests, legislation often favors producers rather than consumers. Well-organized producer groups, as squeaky wheels in the legislative machinery, get the most grease in the form of favorable legislation.

Special interest groups expend abundant resources to secure these advantages. For example, political action committees, known more popularly as PACs, contribute millions to congressional campaigns. More than 4,000 PACs try to shape federal legislation. Top contributors recently included tobacco companies and the American Trial Lawyers Association. Tobacco interests want to influence cigarette legislation, and lawyers fear reforms that would limit liability suits.

Rational Ignorance

How do elected officials get away with serving special interests? Why don't voters elect someone else? Sometimes voters do, especially when there is a scandal. However, some people don't bother to vote and even those who do vote consume so many different goods and services that they have neither the time nor the incentive to keep up with public choices that affect any particular product. For example, a $75 million subsidy for wool growers amounts to only about 25 cents per U.S. citizen. Would you make the effort to protest passage of this law to save 25 cents on your taxes?

Therefore, unless voters have a special interest in the legislation, they adopt a stance of **rational ignorance**. This means the costs and benefits of the thousands of proposals considered by elected officials remain largely unknown to voters. The cost to the typical voter of acquiring and acting on such information usually is greater than any possible benefit. This is why it's hard to interest the public in the public interest.

In contrast, consumers have much more incentive to gather and act on information about market choices. For example, a consumer in the market for a new car has an incentive to examine the performance records of different models, test-drive a few, and check prices at dealerships and on the Internet. That person has complete control over the choice of a new car. *Because information and the time required to acquire and digest it are scarce, consumers focus more on private choices than on public choices. The payoff in making wise private choices usually is more direct, more immediate, and more substantial.*

✓ CHECKPOINT

Why does representative democracy favor special interests?

rational ignorance

A stance adopted by voters when they find that the cost of understanding and voting on a particular issue exceeds the benefit expected from doing so

ETHICS IN ACTION

Minors Banned from Making Political Contributions

A lawsuit argued before the U.S. Supreme Court affects both political campaign reform and the rights of minors. The Bipartisan Campaign Reform Act (BCRA) of 2002, known popularly as the McCain-Feingold bill, included a provision that banned political campaign contributions by minors. Evidently, such donations made in the name of the actual donor's children were a means to avoid donation limits imposed on individuals. The result was a prohibition (or ban) on such donations in the BCRA that closed the loophole. However, it also eliminated the potential for legitimate contributions by minors. A lawsuit was brought against the bill by a group of minors along with other plaintiffs—including the National Rifle Association and the American Civil Liberties Union—versus the Federal Election Commission. The Court heard the case in September 2003 on appeal from a 1,600-page decision of a three-judge federal appeals court that threw out numerous sections of the law as unconstitutional. In its ruling on the case, handed down in December 2003, the Supreme Court by a 5 to 4 vote upheld most of the Act's provisions. It did, however, strike down the provisions outlawing such donations by minors as infringing on their free speech. It did not prohibit the states from passing similar prohibitions, and several have done so.

THINK CRITICALLY

What ethical balance was being struck by the law? Do you support the prohibition? Why or why not?

Sources: A. Pinkus, "Stopping the Piggy Bank Donors," *Campaigns and Elections,* June 2005; "The McCain Feingold Act," *Encarta 2006.*

NET Bookmark

Access the Campaign Finance Reform Special issue of the American Prospect Online web site through thomsonedu.com/school/econxtra. You will find a comprehensive list of web sites on campaign reform. Choose one of these links and write a paragraph describing the web site's message.

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Bureaus Versus Firms

bureaus
Government agencies charged with implementing legislation and financed through legislative bodies

Elected representatives approve legislation, but the task of implementing that legislation typically is delegated to **bureaus**. These are government departments and agencies whose activities are financed through legislative bodies. Examples include the FBI, FDA, FCC, EPA, the Pentagon, your state's department of motor vehicles, and your public school system.

Voluntary Exchange Versus Coercion

Market exchange relies on the voluntary behavior of buyers and sellers making private choices. Don't like tofu? No problem—don't buy any. Nobody can force you to buy something you don't want. In political markets the situation is different. Only public choices reached by unanimous consent will involve no government coercion. Even if you object to certain government programs, you must still pay the taxes that ultimately fund those programs. Public choices are enforced by the police power of the state. If you fail to pay your taxes, you could go to jail.

Product Prices

For-profit firms sell products for prices that at least cover the cost of production. Bureaus usually offer products for either a zero price or some price below cost. For example, if you plan to attend a public college or university in your state, your tuition will probably cover only about half the state's cost of providing your education.

Because the revenue side of the government budget usually is separate from the expenditure side, there is no necessary link between the marginal cost of a public program and the marginal benefit. Contrast this with the private sector, in which the marginal benefit of a good must at least equal marginal cost. Otherwise, people wouldn't buy it.

Customer Feedback

Markets offer firms a steady stream of consumer feedback. If prices are too high or too low, surpluses or shortages become obvious. Not only is consumer feedback abundant in markets, but firms have a profit incentive to act on that feedback. The firm's owners stand to gain from any improvement in customer satisfaction or any reduction in the cost of production.

Because public goods and services are not sold in markets, government bureaus receive less consumer feedback. There usually are no prices for public goods and no obvious shortages or surpluses. For example, how would you know whether there was a shortage or a surplus of police protection in your community?

Voter Incentives

Voters can move from a jurisdiction if they think the government there is inefficient. This mechanism, whereby people "vote with their feet," promotes some efficiency at the state and local levels. For example, parents might decide to move to a better school district. Voters who are not satisfied with the federal government, however, cannot easily vote with their feet.

In the private sector, competition makes firms more responsive to customers. If a firm's product does not appeal to consumers, that firm will either have to shape up or go out of business. Bureaus that do not appeal to voters do not necessarily go out of business. A bureau that is inefficient may continue to waste resources indefinitely. Thus, bureaus face less pressure to satisfy consumer demand or to minimize costs. A variety of studies compares costs for products that are provided by both public bureaus and private firms, such as garbage collection. Of those studies that show a difference, most find that private firms

are more efficient. A private firm that is inefficient in a competitive market will earn no profit and go out of business.

Private Versus Public Production

Just because some goods and services are *financed* by the government does not mean they must be *produced* by the government. Elected officials may contract directly with private firms to produce public output. This could introduce more competition and more efficiency. For example, a city council may seek competitive bids from private firms to handle garbage collection for the city. Private firms now provide everything from fire protection to prisons to schools in certain jurisdictions.

Elected officials also may use some combination of bureaus and firms to produce the desired output. For example, the Pentagon, a giant bureau, hires and trains military personnel. Yet the Pentagon contracts with private firms to develop and produce weapons systems. State governments typically hire private contractors to build roads but employ state workers to maintain them.

The mix of firms and bureaus varies over time and across jurisdictions. However, the trend is toward greater production by the private sector. These goods and services are still financed by government, usually with taxes.

When government bureaus produce public goods and services, they are using *the internal organization of the government*—the bureaucracy—to supply the product. When governments contract with private firms to produce public goods and services, they are using *the market* to supply the product. Legislators may prefer dealing with bureaus rather than with firms for two reasons. First, in situations where it is difficult to specify in a contract just what is being produced, as with education or social work, bureaus may be more responsive to the legislature's concerns. Second, bureaus provide legislators with more opportunities to reward political supporters with government jobs.

✓CHECKPOINT

Why might bureaus be less responsive to customers than firms are?

Main Idea

Cost/Benefit Analysis for Government Programs

Government policies are carried out through bureaus. The costs of carrying out policies sometimes exceed the benefits derived from them. This may occur due to the following factors: incentives facing voters, government officials, and government employees; actions by special interest groups; or other social goals. The EPA is a government bureau that, among other activities, oversees programs that control the cleanup of hazardous wastes. How could the costs versus the benefits of the hazardous waste cleanup programs be evaluated?



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Assessment 14.3

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Key Concepts

1. Imagine that your class has decided to earn money to take a class trip in their senior year. The big question is deciding where the class should go. Some students want to visit Washington, D.C., some would prefer New York City, others would choose Disney World or other well-known destinations. Describe how this decision might be made and why this decision-making process is similar to the way choices are made by government.
2. Suppose a school's sports director decided to spend $15,000 to purchase new equipment for the football team. Although this decision left only $5,000 to pay for equipment for all of the school's other teams, most of the students at the school didn't complain. Explain how this situation demonstrates the idea of *rational ignorance.*
3. Why does the saying "the squeaky wheel gets the grease" often describe how government decisions are made?
4. What would happen to a private firm that employed clerks who were rude or unresponsive to customer requests? Why may bureaucracies employ such workers and still survive over many years?
5. Why might parents demand fewer services from public schools if each parent was required to pay for these services directly from the family's own funds?

Graphing Exercise

6. Use data in the table to construct a bar graph that shows the per-student spending in selected states for public schools. What might explain the difference in the levels of funding among states? Do you think that there is a direct relationship between the amount spent and the quality of education provided? Explain your answer.

Per-Student Public School Spending in Selected States, 2004

State	Per-Student Spending	State	Per-Student Spending
Connecticut	$12,394	Texas	$7,698
Rhode Island	$10,976	Mississippi	$6,556
Ohio	$10,102	Nevada	$6,177
Indiana	$ 9,138	Utah	$5,556

Source: *Statistical Abstract of the United States,* 2006, p. 164.

Think Critically

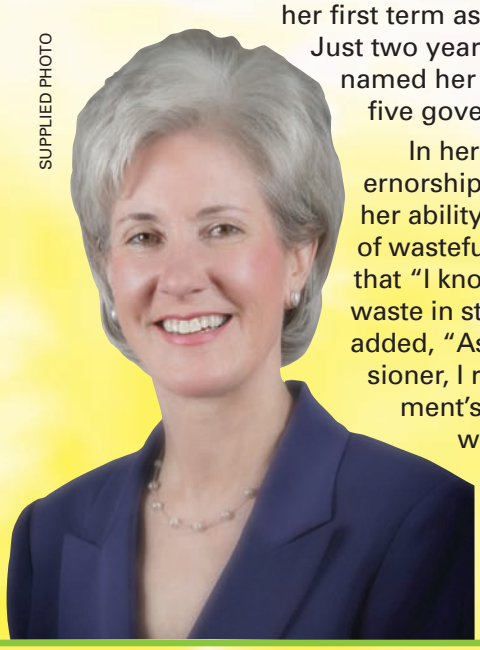
7. **Government** Identify and describe a current public policy issue that is important to you. Explain how you could work to influence legislation that would affect government policy. Why might you be more successful acting as a member of a group rather than as an individual voter?

movers & shakers

Kathleen Sebelius *Governor of Kansas*

You might say that politics is in Kathleen Sebelius's blood. When she was young, her father John J. Gilligan served as a councilman in Cincinnati, Ohio; a U.S. representative; and governor of Ohio. Kathleen decided to pursue a political science degree from Trinity College in Washington, D.C. Later she earned a master's degree in public administration from the University of Kansas. Along the way she met and married Gary Sebelius, the son of a former congressman from Kansas.

Sebelius won a seat in the Kansas House of Representatives, where she served from 1987 to 1994. She then was elected Insurance Commissioner for Kansas and earned a reputation as a tough, innovative, and tight-fisted leader. She was named one of America's Top Ten Public Officials in 2001 by *Governing Magazine.* In 2003, Kathleen Sebelius began her first term as governor of Kansas. Just two years later *Time* magazine named her one of the nation's top five governors.



SUPPLIED PHOTO

In her campaign for the governorship, Sebelius promoted her ability to rid the government of wasteful spending, indicating that "I know firsthand you find waste in state government." She added, "As Insurance Commissioner, I reduced the department's budget by 19 percent while vastly improving department services." During her tenure she fired two state attorneys, who she believed "were double-billing the state and charging exorbitant fees." She lowered the fees paid to other state attorneys and, in all, saved the state more than $4 million.

Throughout her campaign, she called for a strict accounting of where Kansas was spending its money, something not done for more than 20 years. She promised voters she would begin "an in-depth look at government operations and initiate an extensive review of state government, looking for waste and inefficiency." The results of her review added up to nearly $1 billion in savings and efficiencies in just a few years.

When Sebelius took over as governor, the Kansas sales tax was designed to tax only tangible goods such as groceries, cars, and clothing. Service providers, such as accountants, beauticians, and veterinarians, were not taxed. Asked if she thought such a tax structure was fair, she replied, "I will fight to make sure that no single sector of our economy or group of our citizens bears a disproportionate share of our tax burden."

As promised throughout her campaign, Sebelius has made improving public education a priority. Her guiding principle is that, when it comes to education and Kansas' future, simply doing better just isn't good enough. She supports investing in schools—from preschools to colleges—and in ensuring schools are accountable with taxpayers' money.

To fight the rising cost of healthcare, Governor Sebelius has made it easier for Kansans to get low-cost medicines from Canada and Europe. She also is working to help more businesses provide health insurance to their employees.

SOURCE READING

Kathleen Sebelius promised to "fight to make sure that no single sector of our economy or group of our citizens bears a disproportionate share of our tax burden." Does this statement support the benefits-received principle of taxation or the ability-to-pay principle? Explain.

ENTREPRENEURS IN ACTION

In small groups, discuss the pros and cons of holding a political office and serving as an elected official. How might the need to maximize political support conflict with the elected official's ability to follow through with his or her political goals?

Source: http://www.usatoday.com/news/politicselections/2002-11-06-sebelius_x.htm; http://www.ksgovernor.com/meetkathleen.php; http://www.ksgovernor.org/cabinet.html

14 Chapter Assessment

Summary

14.1 Public Goods and Taxation

a Public goods are different from private goods in that they are nonrival in consumption. The market demand for public goods is equal to the sum of the marginal benefits for all members of a community. The efficient level of a public good is found where the sum of the marginal benefits is equal to the good's marginal cost.

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b There are two generally recognized principles of taxation: the *benefits-received principle* and *the ability-to-pay principle.* According to the benefits-received principle, taxpayers should pay in proportion to the benefit they receive from the service the tax supports. According to the ability-to-pay principle, people with more income or more wealth should be taxed at higher rates.

c *Tax incidence* indicates who actually bears the burden of a tax. Under a *proportional tax,* all people would pay the same percent of their incomes in tax. With *progressive taxes,* people pay a greater share of their incomes in tax as their incomes grow. This is true of the federal income tax. With *regressive taxes,* people pay a smaller share of their income in tax as their incomes grow. This is true of most excise taxes such as the tax on tobacco products or gasoline.

d The *marginal tax rate* is the percentage of each additional dollar of a taxpayer's income that is paid in taxes. High marginal tax rates reduce a person's after-tax income and can discourage people from working to earn additional income. The government gathers additional revenue by imposing sin taxes to discourage certain types of behavior, by user fees, by fines, and by borrowing funds.

14.2 Federal, State, and Local Budgets

a Through the first 150 years of U.S. history, federal spending amounted to about 3 percent of GDP except during times of war. In the past 70 years, however, this share has grown to roughly 20 percent of GDP, or more than $2.7 trillion in 2007. The largest share of federal spending goes to income redistribution (48 percent). The largest source of federal revenue comes from the personal income tax (45 percent).

b The largest share of state spending goes to aid local government (33 percent). The largest source of state revenue comes from the federal aid (28 percent).

c Local governments spend the largest share of their budget for education (43 percent). The greatest source of local government revenue comes from state and federal aid (37 percent).

d Total government outlays in the United States are smaller relative to GDP than government outlays in most other major industrial nations. Relative to GDP, government outlays in most industrial nations fell between 1993 and 2007.

14.3 Economics of Public Choice

a When government leaders make decisions, they do not necessarily try to achieve economic efficiency. They may instead work to maximize their political support and their chances of getting reelected. Special interest groups often try to get governments to make choices that benefit the groups. Many voters are not concerned or even aware of these efforts to influence legislation. Most people adopt a stance of *rational ignorance* because the cost of learning about legislation exceeds any benefits they expect from working to influence the legislation.

b Many laws are implemented or enforced by government *bureaus* that are not always responsive to interests of the population as a whole. Government bureaus often supply programs that have little link between costs and benefits. On the other hand, people won't make market purchases unless the expected benefits at least equal the expected costs.

c Some governmental units have attempted to supply services more efficiently by contracting with private firms to produce them.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** A tax as a percentage of income increases as income increases

_____ **2.** Government agencies charged with implementing legislation and financed through legislative bodies

_____ **3.** A plan for government spending and revenues for a specified period, usually a year

_____ **4.** Those who receive more benefits from a government program funded by a tax should pay more of that tax

_____ **5.** A tax as a percentage of income decreases as income increases

_____ **6.** Those with a greater ability to pay should pay more of a tax

_____ **7.** The percentage of each additional dollar of income that goes to pay a tax

_____ **8.** A tax as a percentage of income remains constant as income increases

_____ **9.** Taxes deducted from paychecks to support Social Security and Medicare

_____**10.** A stance adopted by voters who find that the cost of understanding and voting on a particular issue exceeds the benefit expected from doing so

a. ability-to-pay tax principle

b. benefits-received tax principle

c. bureaus

d. government budget

e. marginal tax rate

f. maximizing political support

g. payroll taxes

h. progressive taxation

i. proportional taxation

j. rational ignorance

k. regressive taxation

l. tax incidence

Review Economic Concepts

11. Public goods are __?__ in consumption.

12. **True or False** The efficient level of production of a public good is found where the marginal benefit of additional units of that good is zero.

13. Which of the following is an example of the *benefits-received tax principle*?

a. the excise tax on cigarettes

b. a tariff on imported automobiles

c. a sales tax on purchases of new clothing

d. the toll that is paid to cross a bridge

14. **True or False** Taxes that fall more heavily on people who earn larger incomes represent the *ability-to-pay principle of taxation.*

15. An *ability-to-pay tax* also is likely to be

a. regressive.

b. progressive.

c. proportional.

d. reactionary.

16. If a tax structure is *progressive* and we know that Tom pays $1,000 on his $10,000 income, then Alicia, who earns $30,000, must pay

a. more than $3,000 in tax.

b. exactly $3,000 in tax.

c. less than $3,000 in tax.

d. more than $4,000 in tax.

17. The part of the next dollar you earn that is taken in tax is your __?__.

18. The largest share of federal spending is allocated to
    a. national defense.
    b. income redistribution.
    c. interest on the national debt.
    d. government employee salaries.

19. **True or False** High *marginal tax rates* encourage people to work and earn additional income.

20. **True or False** The largest source of federal government revenue is borrowing.

21. The biggest spending category for state governments is __?__.

22. Which of the following is not a source of revenue for state or local governments?
    a. tariffs on imported goods
    b. aid from the federal government
    c. income taxes
    d. sales taxes

23. **True or False** The largest part of local government spending is for schools.

24. Government outlays in the United States are roughly what percent relative to the nation's GDP?
    a. 21
    b. 27
    c. 30
    d. 37

25. **True or False** Some political leaders appear to be more interested in whether they are re-elected than in how well government works.

26. Voters sometimes choose not to learn about how their taxes are spent because
    a. collectively, they are not able to influence government decisions.
    b. there is no information available to them about how their tax money is spent.
    c. they are not affected by government policies.
    d. they think the cost of learning about how tax money is spent is greater than the benefits of working to influence legislation.

27. One theory states that unless voters have a special interest in a piece of legislation, they are likely to adopt a stance of __?__.

28. Which of the following is not an example of a government *bureau*?
    a. your community's public school system
    b. the state highway department
    c. a firm that has been hired to collect garbage in your community
    d. the federal court system

29. **True or False** *Bureaus* usually offer products for either a zero price or some price below cost.

Apply Economic Concepts

30. **Identify the Optimal Quantity of a Public Good** Imagine that many residents of a riverside community wish to have a break wall built around their town to protect their homes when the river floods. The cost of construction is $100,000 per 100 yards. The break wall will have no value unless it is 1,800 yards long to surround the entire community. The people of the community have voted to spend up to $1,000,000 for the break wall. How much of this amount should they spend? How does this situation demonstrate a problem of achieving an efficient level of public goods?

31. **Decide Which Tax Is Best** Suppose that the Environmental Protection Agency (EPA) has determined that the sewer system in your town is inadequate and must be replaced. Your community will need to borrow $20,000,000 to build a new system. This loan must be repaid from tax revenues over the next 20 years. There is a debate over the type of tax that should be imposed to collect the needed money. One idea is to charge people an extra $1 for each thousand gallons of water they use. The other is to impose a city income tax and charge people 5 percent of their

annual federal income tax payment. What principle of taxation is each of these proposals based on, and which would you support? Explain your answer.

32. **Sharpen Your Skills—Math: Evaluate the Marginal Tax Rate** Members of Congress often have debated the importance of the marginal income tax rate on the economy. Suppose that your marginal federal income tax rate is 25 percent. You pay Social Security and Medicare taxes at a rate of 7.65 percent, and your state income tax will take 6 percent of any additional income you earn. Your boss has asked you to go on a sales trip to Chicago next weekend. She has offered to pay you an extra $500 if you agree to go. Would you accept this offer? If you did, how much of the $500 will you get to keep after taxes?

33. **Petition Your Congressional Representative** The national debt is growing rapidly, and you are concerned that you will grow up to owe debts that have been imposed by older generations. Write a letter to your congressional representative expressing your concern and listing steps you think the government should take to reduce the size of the deficit. Explain why the representative may pay only limited attention to what you have to say.

34. **Assess a Proportional Income Tax** Some politicians believe that high marginal tax rates discourage people from working. They have suggested that it would be better to charge all taxpayers the same percent of their income so that the lower marginal tax rates for many people would encourage them to work and earn more. It has been estimated that the same amount of tax revenue could be collected if all taxpayers paid roughly 23 percent of what they earn in tax. This would mean that a person who earns $10,000 per year would pay $2,300 in tax while a person who earns $100,000 would pay $23,000. Decide whether you believe this is a good or a bad idea. Then write several paragraphs that identify and explain reasons for your point of view. Be careful to discuss the impact of such a tax structure on the economy as well as your opinion of its fairness.

35. **Calculate Historical Tax Liabilities** In the past, maximum federal income tax rates have been much higher than they are today. In 1944, for example, those who had taxable incomes of $1,000,000 or more paid a marginal tax rate of 90 percent. If a person's taxable income increased from $1 million to $1.1 million in that year, how much of the additional income would he or she have been able to keep? What might have justified such a high tax rate at that time? What impact do you think such a high tax rate would have on the U.S. economy today?

36. **Construct a Bar Graph to Show Marginal Income Tax Rates** The federal marginal income tax rates for single individuals in 2006 are shown in the table. Construct a bar graph to show these rates. What if anything has happened to these rates since 2006? Why have changes been made in these rates or why have they remained unchanged?

Federal Income Tax Rates for Single Filers

Taxable Income In 2006	Marginal Tax Rate
$0–$7,550	10%
$7,550–$30,650	15%
$30,650–$74,200	25%
$74,200–$154,800	28%
$154,800–$336,550	33%
$336,550 or more	35%



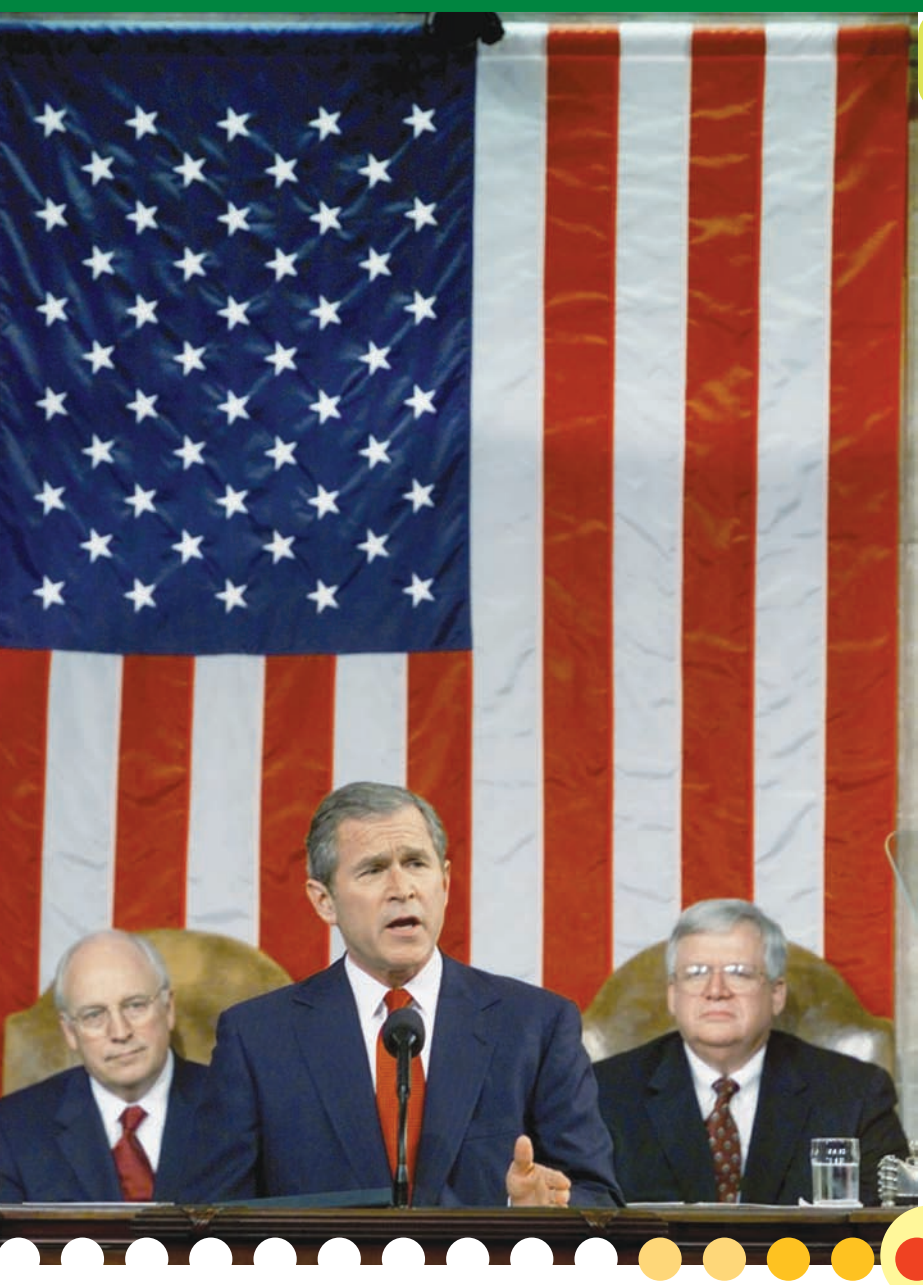
37. **Access the Policy** Debate entitled "How should we reform the current tax system?" in the **EconDebate Online** at thomsonedu.com/school/econxtra. Read the Issues and Background. Write a paragraph summarizing both sides of this debate. Then choose one of the links listed under "Different Perspectives in the Debate." Write another paragraph that explains which side of the debate the writer of the article is on and summarizes the writer's basic argument.

15 Fiscal Policy, Deficits, and Debt

15.1 The Evolution of Fiscal Policy

15.2 Fiscal Policy Reconsidered

15.3 Federal Deficits and Federal Debt



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CONSIDER

What is your normal capacity for academic work, and when do you usually exceed that effort?

If the economy is already operating at full employment, how can it produce more?

Can fiscal policy reduce swings in the business cycle?

Why has the federal budget been in deficit most years?

How is a strong economy like a crowded restaurant?

What did President George W. Bush mean when he proposed a tax cut to "get the economy moving again"?

Point Your Browser
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15.1 The Evolution of Fiscal Policy

Objectives

- Identify the economy's potential output.
- Distinguish between fiscal policy before and after the Great Depression.

Overview

Government spending for national defense, education, the environment, and other programs aims to achieve specific objectives, such as national security, a more educated work force, cleaner air, and the like. Fiscal policy has a broader focus. Fiscal policy considers the overall impact of the government's budget on the economy, especially on employment, output, and prices. Fiscal policy tries to promote full employment and price stability by targeting changes in aggregate demand.

Key Terms

potential output

natural rate of unemployment

classical economists

annually balanced budget

multiplier effect

In the News

Emergency Spending

The 1990 Budget Enforcement Act created budget limits, or "caps," to try to force the government to live within some financial restraints. Even before that Act became law, some saw it as flawed because it didn't allow for unforeseen disasters. To provide for this, a provision for "emergency spending" was added. Today the government has two budgets. The regular budget lies "within the caps," but the other is a shadow budget where the emergency spending takes place without any restraint of caps. It has become an annual exercise of the White House to send emergency spending bills to Congress. Emergency spending is charged straight to the deficit. Besides legitimate emergency spending for events like Hurricane Katrina, other items are routinely tacked onto these bills. Sometimes they are regular, ongoing expenses that are shifted to the emergency supplemental spending bill. Other items are money for what some consider "pork" projects, such as restoration of particular oyster beds. This allows the President and Congress to keep two sets of books. For example, the regular budget may report a 3 percent increase in defense spending (about the same as inflation and under the budget cap). In the second, with all of the emergency spending included, the growth in defense spending rises to 12 percent. The emergency budget has become a way for elected officials to dodge the financial discipline of budget caps.

THINK ABOUT IT

Do you think there should be limits on what Congress and the President can put into "emergency spending" bills?

Source: Judd Gregg, "The Safety Valve Has Become a Fire Hose," *Wall Street Journal,* April 18, 2006.

Fiscal Policy and Potential Output

The Graphing Workshop

Fiscal policy aims to use government taxing and spending to move the economy toward full employment with price stability. The focus is mainly on shifts of the aggregate demand curve. If unemployment is high, fiscal policy aims to increase aggregate demand as a way of boosting output and employment. If aggregate demand is already so strong that it threatens to trigger higher inflation, fiscal policy tries to relieve that pressure by reducing aggregate demand.

potential output
The economy's maximum sustainable output in the long run

natural rate of unemployment
The unemployment rate when the economy is producing its potential level of output

Potential Output

Fiscal policy tries to move the economy to its potential output. **Potential output** is the economy's maximum sustainable output in the long run, given the supply of resources, the state of technology, and the rules of the game that nurture production and exchange. Potential output also is referred to as the full-employment output. When the economy produces its potential output, it is operating on its production possibilities frontier.

Suppose potential output equals a real GDP of $12 trillion. Potential output in Figure 15.1 is the vertical line where real GDP is $12 trillion. If potential output is achieved, the economy reaches full employment with no inflationary pressure. At full employment, the economy is doing as well as possible in the long run. In theory, fiscal policy can be used to ensure the economy achieves its potential, with full employment and price stability.

The unemployment rate that occurs when the economy is producing its potential GDP is called the **natural rate of unemployment**. At this rate, there is no cyclical unemployment. Generally accepted estimates of the natural rate of unemployment are in the range of 4 percent to 5 percent of the labor force.

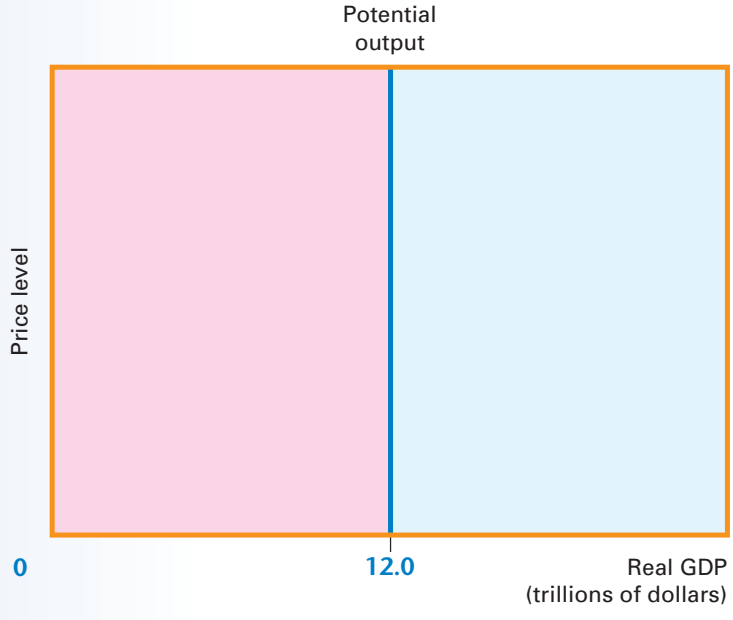
Output Below Potential

If the aggregate demand curve and aggregate supply curve intersect in the pink-shaded area of Figure 15.1, then

Main Idea

Fiscal Policy and Potential Output — **Figure 15.1**

Potential output is the economy's maximum sustainable output in the long run. The pink-shaded area indicates real GDP below the economy's potential. The blue-shaded area indicates real GDP exceeding the economy's potential. When the economy, through federal fiscal policy, reaches potential output, there is full employment and price stability.



output is less than the economy's potential. The economy is not producing as much as it can. Unemployment exceeds its natural rate. The amount by which short-run output falls short of the economy's potential output is called a *contractionary gap.* Faced with this gap, policy makers often decide to reduce taxes or increase government spending. The idea is to stimulate aggregate demand as a way of increasing output to its potential. Figure 15.2 illustrates this situation.

Output Exceeding Potential

If the aggregate demand curve and aggregate supply curve intersect in the blue-shaded area of Figure 15.1, then output exceeds the economy's potential. Unemployment is below its natural rate. The amount by which actual output in the short run exceeds the economy's potential output is called the *expansionary gap.*

This seems like a good outcome. However, production beyond the economy's potential creates inflationary pressure in the economy. Production exceeding the economy's potential is not sustainable in the long run. The result is higher inflation and a return to the economy's potential output. To head off this higher inflation, policy makers sometimes increase taxes or reduce government spending to reduce aggregate demand.

How Can Output Exceed the Economy's Potential?

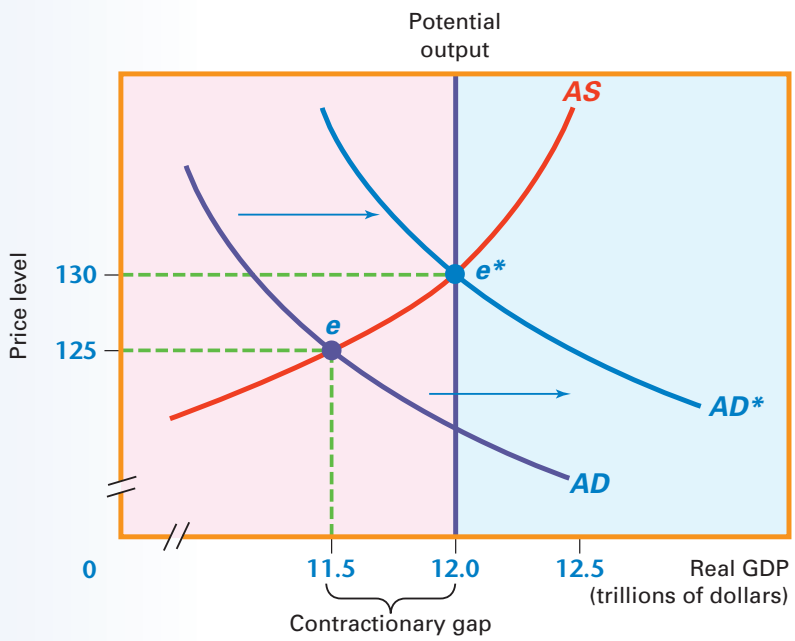
You probably have no problem understanding that output may fall short of its potential. But how can output exceed its potential? Remember, potential output means not zero unemployment, but the natural rate of unemployment. Even in an economy producing its potential output, there is still some unemployed labor and some unused production capacity.

The Graphing Workshop

Discretionary Fiscal Policy to Close a Contractionary Gap — **Figure 15.2**

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The aggregate demand curve AD and the aggregate supply curve AS intersect at point e. Output of $11.5 trillion falls short of the economy's potential of $12.0 trillion. The result is a contractionary gap of $0.5 trillion. This gap could be closed by discretionary fiscal policy that increases aggregate demand by just the right amount. An increase in government spending, a decrease in taxes, or some combination of the two could shift aggregate demand to AD*, moving the economy to its potential level of output at e*.



NET Bookmark

The University of Washington's Fiscal Policy Center provides an extensive list of links about U.S. fiscal policy. Access that site through thomsonedu.com/school/econxtra and use the links to determine what tax and spending proposals have been made in Congress during the last six months. Choose one of those proposals and use aggregate demand and aggregate supply to explain its likely impact.

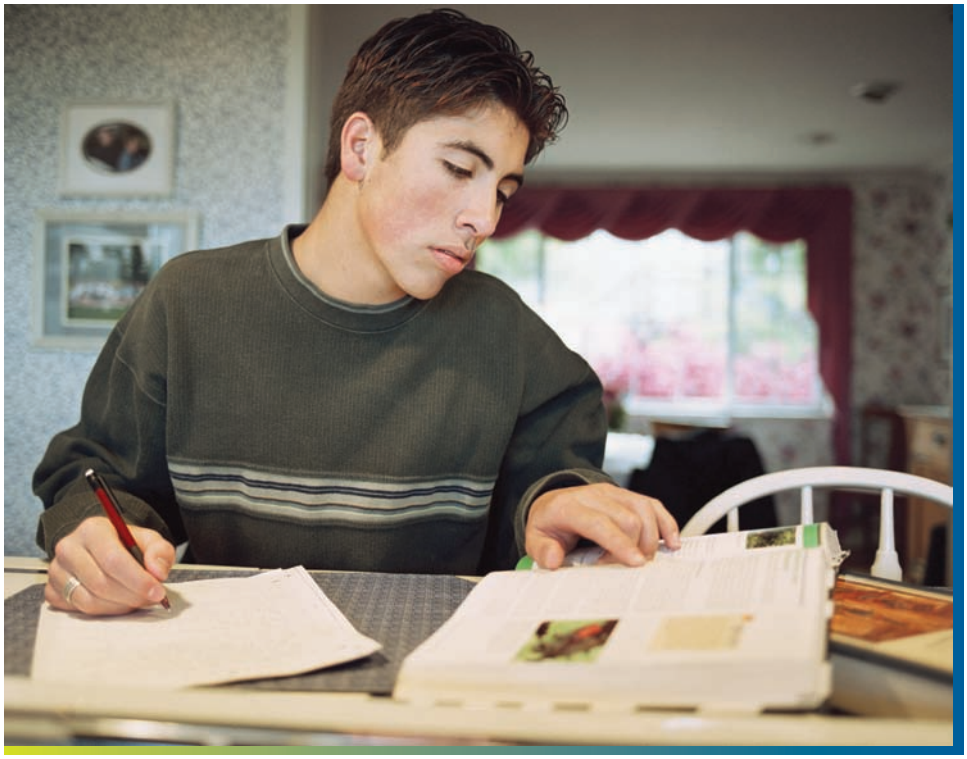
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If you think of potential output as the economy's *normal production capacity,* you get a better idea of how the economy can temporarily exceed that capacity. Consider your own study habits. During most of the school year, you display your normal capacity for academic work. As the end of a grading period draws near, however, you may step it up a notch to finish long-standing assignments. You may study more than usual and make an extra effort trying to pull things together. During these brief stretches, you study beyond your normal capacity, beyond the schedule you follow on a regular or sustained basis.

Producers, too, can exceed their normal capacity in the short run to push output beyond the economy's potential. For example, during World War II, businesses pulled out all the stops to win the war. The unemployment rate fell below 2 percent. However, in the long run, the economy does not exceed its potential, just as you don't boost your study effort permanently. Output in the long run gravitates back to the economy's potential. *Production beyond the economy's potential usually leads only to inflation in the long run.* For example, despite price controls put in place during World War II, inflation was still relatively high.

✓ CHECKPOINT

What is the economy's potential output?



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How does the concept of potential output relate to your study habits?

The Rise of Fiscal Policy

Before the Great Depression, most policy makers believed that an economy producing less than its potential in the short run would move to its potential in the long run without help from the federal government. They thought the government should just balance its budget and forget about trying to stabilize the economy in the short run. Besides, before the Great Depression, the federal government itself played a relatively minor role in the economy. At the onset of the Great Depression, for example, federal spending was less than 3 percent of GDP, compared to about 20 percent today.

View of Classical Economists

Before the 1930s, fiscal policy was seldom used to influence the overall performance of the economy. Prior to the Great Depression, public policy was shaped by the views of **classical economists**. They advocated *laissez-faire,* the belief that free markets without government intervention were the best way to achieve the economy's potential output.

Classical economists did not deny the existence of depressions and high unemployment. They argued, however, that the sources of such crises lay outside the market system, in the effects of wars, tax increases, poor growing seasons, and the like. Such external events could shock the economy, reducing output and employment in the short run. Yet classical economists believed that natural market forces, such as declining prices, wages, and interest rates, would end any recession in a relatively short time by encouraging people and businesses to spend more.

Simply put, classical economists argued that if the economy's average price level was too high to sell all that was produced, prices would fall until the quantity supplied equaled the quantity demanded. If wages were too high to employ all who wanted to work, wages would fall until the quantity of labor supplied equaled the quantity demanded. If

classical economists
A group of laissez-faire economists, who believed that economic downturns corrected themselves in the long run through natural market forces

Span the Globe

Laissez-Faire Policies in France

The French term laissez-faire literally means "allow to do." The exact origins of the term are unknown. It was first associated with a group of French economists called the Physiocrats. This group was popular in the late 1700s and is generally considered the founders of a scientific school of economic thought. Physiocrats believed that economies worked best if grounded in agriculture and allowed to run freely based on natural laws, not regulation by the government. Physiocrats strongly opposed the growing European policies of mercantilism, in which governments heavily regulated trade and manufacturing more for their own good than that of individual property owners. Physiocrats also believed that land and the products grown from it were the source of wealth. Mercantilists believed that hard currency and precious metals were the source of wealth. In the end, even though mercantilism itself did not survive very long, the mercantilists' theories of wealth became more widely accepted than those of the Physiocrats. Nevertheless, the Physiocrats' laissez-faire ideas were embraced by many people. When the French Revolution was launched in 1789, the new government instituted a number of reforms aimed at easing regulations on trade. The French government today is far from laissez-faire. Modern France has a mixed economy, which includes heavy regulation over the economy but not complete control of private property.

THINK CRITICALLY

Why do you think the French government moved away from applying the ideas of the Physiocrats to its economy? With which philosophy regarding wealth—the mercantilist or the Physiocrat—do you most agree? Justify your answer.

interest rates were too high to invest all that had been saved, rates would fall until the amount invested equaled the amount saved.

The classical approach claimed that natural market forces, through flexible prices, wages, and interest rates, would move the economy toward its potential GDP in the long run. Classical economists saw no need for changes in government spending or taxing to "correct" the economy.

annually balanced budget

Matching annual spending with annual revenue, except during war years; approach to the federal budget prior to the Great Depression

Instead, fiscal policy prior to the Great Depression pursued an **annually balanced budget**, except during wartime. This means that each year the government aimed to match annual spending with annual revenue. Tax revenues tend to rise during expansions and fall during recessions. Therefore, with an annually balanced budget, spending increased during expansions and declined during recessions. One problem with this approach was that such a pattern magnified fluctuations in the business cycle. This overheated the economy during expansions and increased unemployment during recessions.

Great Depression and Keynes

Classical economists acknowledged that market economies could produce less than potential in the short run. The prolonged depression of the 1930s, however, strained belief in the economy's ability to correct itself. The Great Depression was marked by unemployment reaching 25 percent and much unused plant capacity. With vast unemployed resources, output and income fell far short of the economy's potential for several years.

multiplier effect

Any change in fiscal policy affects aggregate demand by more than the original change in spending or taxing

The market adjustments predicted by classical theory and the years of unemployment experienced during the Great Depression represented a clash between theory and fact. In 1936, John Maynard Keynes of the University of Cambridge, England, published *The General Theory of Employment, Interest, and Money*. This book challenged the classical view and touched off what would later come to be called the Keynesian revolution. *Keynesian theory and policy were developed to address the problem of unemployment during the Great Depression.*

Keynes's main quarrel with the classical economists was that prices and wages did not appear flexible enough even in the long run to ensure the full employment of resources. According to Keynes, prices and wages were relatively inflexible—they were "sticky." So if unemployment was high, natural market forces would not return the economy to full employment in a timely fashion. Keynes also believed business expectations might at times become so grim that even very low interest rates were not enough to encourage firms to invest.

The Multiplier Effect

Keynes also argued that any change in taxing or government spending had a magnified effect on aggregate demand. For example, suppose the government spends $100 million on a new presidential plane, Air Force One. Workers and other resource suppliers at Boeing, the manufacturer of the 747, see their incomes rise by $100 million. These people will spend at least part of that higher income on products such as food, clothing, housing, cars, appliances, and the like. As a result, the people who make all those products will also have more income. They will spend some of that higher income on yet more goods and services.

Each round of income and spending increases aggregate spending a little more. This is called the **multiplier effect** of fiscal policy, which says that any change in fiscal policy affects aggregate demand by more than the original change in spending or taxing.

The multiplier effect also could result from a change in business investment and even a change in consumption. However, Keynes focused on changes in government spending and taxing.

The Rise of Fiscal Policy

Three developments in the years following the Great Depression supported the use of fiscal policy in the United States. The first was the influence of Keynes's *General Theory*. Keynes thought the economy could get stuck at a level of output that was well below its potential, well below the full-employment level. He argued that increasing government

spending or cutting taxes could have a multiplier effect on aggregate demand. According to Keynes, fiscal policy should be used in times of high unemployment to increase aggregate demand enough to boost output and employment.

The second development giving credibility to fiscal policy was the powerful impact World War II had on output and employment. The demands of war greatly increased production and cut unemployment to under 2 percent, ending the depression for good.

The third development, largely a consequence of the first two, was the passage of the Employment Act of 1946, which gave the federal government the responsibility for promoting full employment and price stability.

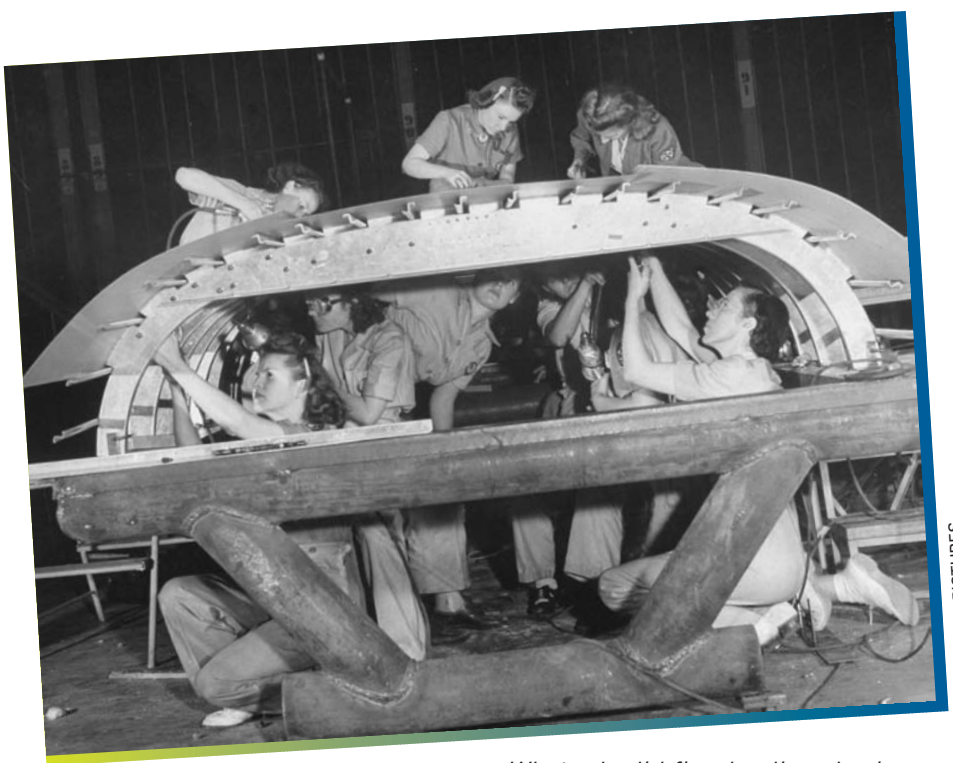
Again, prior to the Great Depression, the dominant fiscal policy was a balanced budget. Indeed, in 1932, when the economy was in the depths of the Depression, federal taxes were increased to help reduce a budget deficit. This made things worse. In the wake of Keynes's *General Theory* and World War II, however, policy makers grew more receptive to the idea that fiscal policy could improve the economy's performance. The objective of fiscal policy was no longer to balance the budget but to promote full employment with price stability, even if this resulted in budget deficits.

✓ CHECKPOINT

How did the Great Depression change fiscal policy?

TeamWork

Working with a partner, perform a role play. Acting as a classical economist, one partner will explain that economic approach. Acting as a Keynesian economist, the other partner will explain that approach. Make a list of the issues about which these two schools of thought disagree.



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What role did fiscal policy play in ending the Great Depression?

Assessment 15.1

Xtra! Study tools
thomsonedu.com/school/econxtra

Key Concepts

1. How close do you think the U.S. economy is currently to its potential output? Explain your answer.
2. Why can the economy still have a 4 to 5 percent unemployment rate when it is at its natural rate of unemployment?
3. In much of 2001, the U.S. economy was in recession. Why would classical economists have believed that this downturn in the economy would not last very long?
4. If the federal government borrows and spends an additional $5 billion, why are aggregate demand, production, and income likely to grow by more than $5 billion?

Graphing Exercise

5. Draw a bar graph to show five rounds of the multiplier effect on spending when the federal government implements fiscal policy by borrowing and spending an additional $10 million. Remember that all spending becomes someone else's income. Assume that each person who receives additional income saves 10 percent and spends 90 percent of these funds, as shown in the table below. How does your graph demonstrate the power of government spending?

Five Rounds of the Multiplier Effect

Round	Additional Spending	Additional Income	Amount Saved
1	$10,000,000	$10,000,000	$1,000,000
2	$ 9,000,000	$ 9,000,000	$ 900,000
3	$ 8,100,000	$ 8,100,000	$ 810,000
4	$ 7,290,000	$ 7,290,000	$ 729,000
5	$ 6,561,000	$ 6,561,000	$ 656,100

Think Critically

6. **History** When Keynes first asserted that the government could stabilize the economy by adjusting its spending and taxing, his ideas were met with skepticism from many economists and politicians. Events during World War II, however, caused most people to change their minds and come to believe that his ideas had some merit. Investigate government borrowing and spending that took place during World War II and explain how they supported Keynes's ideas.

Sharpen Your Skills



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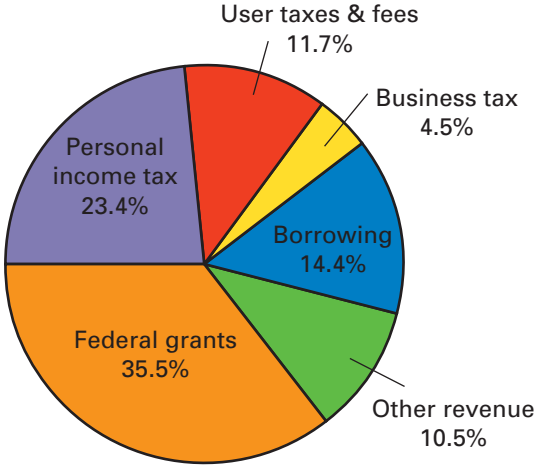
Evaluate and Construct Pie Graphs

The flows of revenue and expenditures in the State of New York's budget for 2003–2004 are shown in these pie charts. Study these charts and answer the questions that follow.

Apply Your Skill

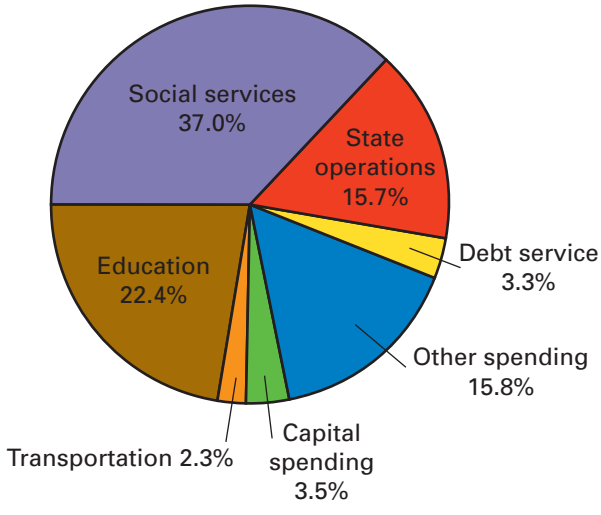
1. Which of New York State's sources of tax revenue would you expect to increase the most because of economic growth following 2003?
2. Which type of government spending would have been easiest to cut when New York leaders found that their tax revenues fell below expectations in 2003?
3. Why were cuts in spending for education and social services an important issue in preparing the budget for 2004–2005 in New York State?
4. Find the budgeted revenue and spending in your state's current budget. Use these data to construct similar pie charts for your state. What might explain differences between sources of revenue and types of spending between your state and New York State?

New York State Sources of Revenue, 2003–2004 Budget



Source: *New York State Statistical Yearbook*, 2005, p. 253.

New York State Expenditures, 2003–2004 Budget



Source: *New York State Statistical Yearbook*, 2005, p. 253.

15.2 Fiscal Policy Reconsidered

Objectives

- Identify two tools of fiscal policy.
- Evaluate discretionary fiscal policy in light of the time lags involved.

Overview

From the Great Depression through the 1960s, fiscal policy appeared to be the miracle drug for what ailed the economy. Policy makers would adopt the necessary spending and tax policies to move the economy to its potential. The 1970s brought a new set of problems—problems of both unemployment and inflation that seemed beyond the reach of fiscal policy. Policy makers also face the challenge of lags between the time they select and implement a policy and when it actually has an effect on the economy.

Key Terms

discretionary fiscal policy

automatic stabilizers

recognition lag

decision-making lag

implementation lag

effectiveness lag

In the News

Requiring a Balanced Budget

By the early 1980s, the U.S. national debt had reached more than $2 trillion. To force the government to curb spending and balance the budget, Congress in 1985 passed the Gramm-Rudman-Hollings Act. This act required automatic cuts if government spending exceeded income. In its first year, the law cut the deficit by $70 billion. However, the Supreme Court struck down the automatic spending cuts as unconstitutional. Congress responded by passing several new versions of the law, the most significant being the Budget Enforcement Act of 1990. This new law tried to control the budget by limiting discretionary spending. Discretionary spending is the funding Congress appropriates each year. This is the portion of the budget that lawmakers can control. It accounts for about one-third of all federal spending. The Act also required that any attempt to increase spending or reduce revenues had to be offset by other actions to provide money for those changes. This often is called "pay-as-you-go." By the end of the 1990s, it looked as if this legislation was working, as the federal government experienced budget surpluses for the first time in years. In recent years following an economic downturn, 9/11, and war, the country has moved back to deficit spending. Most economists agree that returning to a balanced budget will be more difficult than it was a decade ago. An aging population moving into Social Security and Medicare, higher levels of defense spending created by terrorism, and recent tax cuts will make closing the budget gap a tremendous challenge.

THINK ABOUT IT

Senator Fritz Hollings argued that planning budgets one year at a time would be more effective than planning budgets based on ten-year forecasts. Do you agree with him? Why or why not?

Source: Robert J. Samuelson, "Getting Past the Budget Blab," *Washington Post,* February 8, 2006.

Fiscal Policy Tools

The tools of fiscal policy sort into two broad categories: discretionary fiscal policy and automatic stabilizers.

Discretionary Fiscal Policy

This chapter so far has focused mostly on discretionary fiscal policy. **Discretionary fiscal policy** requires congressional and presidential action to change government spending or taxing. These actions are designed to promote macroeconomic goals such as full employment and price stability. President Bush used discretionary fiscal policy in proposing tax cuts in 2001 and 2003.

Automatic Stabilizers

Once adopted, a discretionary fiscal policy measure usually becomes an ongoing part of the federal budget. Most taxing and spending programs, once implemented, become **automatic stabilizers**. They automatically adjust with the ups and downs of the economy to stabilize *disposable income,* the income available after taxes. By smoothing fluctuations in disposable income, automatic stabilizers also smooth fluctuations in consumption and in aggregate demand.

One automatic stabilizer is unemployment insurance. During a recession, unemployment benefits automatically flow to the unemployed. This increases disposable income and props up consumption and aggregate demand. Likewise, welfare spending automatically increases as more people become eligible during hard times.

As an example of an automatic stabilizer working to cool off the economy, the federal income tax takes a bigger bite out of income as income increases. During an economic expansion, income taxes claim a growing percentage of income. This slows the growth in disposable income, which slows the growth in consumption. Therefore, the progressive income tax relieves some of the inflationary pressure that might otherwise arise when output increases during an economic expansion.

On the other hand, when the economy goes into a recession, real GDP declines, but taxes decline faster. Therefore disposable income does not fall as much as real GDP does. This props up consumption and aggregate demand during recessions. The progressive income tax helps insulate the economy against declines in disposable income, in consumption, and in aggregate demand.

Automatic stabilizers smooth fluctuations in disposable income over the business cycle. They boost aggregate demand during periods of recession and dampen aggregate demand during periods of expansion.

Automatic stabilizers do not eliminate economic fluctuations, but they do reduce their magnitude. The stronger and more effective the automatic stabilizers, the less need there is for discretionary fiscal policy. Because of automatic stabilizers introduced during the Great Depression, *the economy is more stable today than it was during the Great Depression and before.* Without much fanfare, automatic stabilizers have been quietly doing their work, keeping the economy on a more even keel.

✓ CHECKPOINT

What are the two tools of fiscal policy?

Ask the Xpert!

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In theory, how does a tax cut work to stimulate the economy?

discretionary fiscal policy

Legislative changes in government spending or taxing to promote macroeconomic goals

automatic stabilizers

Government spending and taxing programs that year after year automatically reduce fluctuations in disposable income, and thus in consumption, over the business cycle

NET Bookmark

In the United States, fiscal policy is determined jointly by the President and Congress. The Congressional Budget Office provides analysis to Congress. The Office of Management and Budget does the same for the executive branch. Access the web sites for these offices through thomsonedu.com/school/econxtra to get a sense of the kinds of analysis being done and how they might be used in determining fiscal policy. Write a one-page paper describing your findings.

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Problems with Discretionary Fiscal Policy

Discretionary fiscal policy is a type of demand-management policy. The idea is to enact measures that increase or decrease aggregate demand to smooth economic fluctuations and move the economy toward its potential output. This seemed to work between the Great Depression and the 1960s. The 1970s, however, turned out to be different.

Stagflation

The problem during the 1970s was stagflation. A decrease in aggregate supply created the double trouble of higher inflation and higher unemployment. The aggregate supply curve shifted left because of crop failures around the world, sharply higher oil prices, and other adverse supply shocks. Demand-management policies are not suited to solving the problem of stagflation. This is because in the short run, it is impossible to fight unemployment and inflation at the same time with fiscal policy. An increase in aggregate demand through increased government spending or reduced taxation would worsen inflation, whereas a decrease in aggregate demand would worsen unemployment.

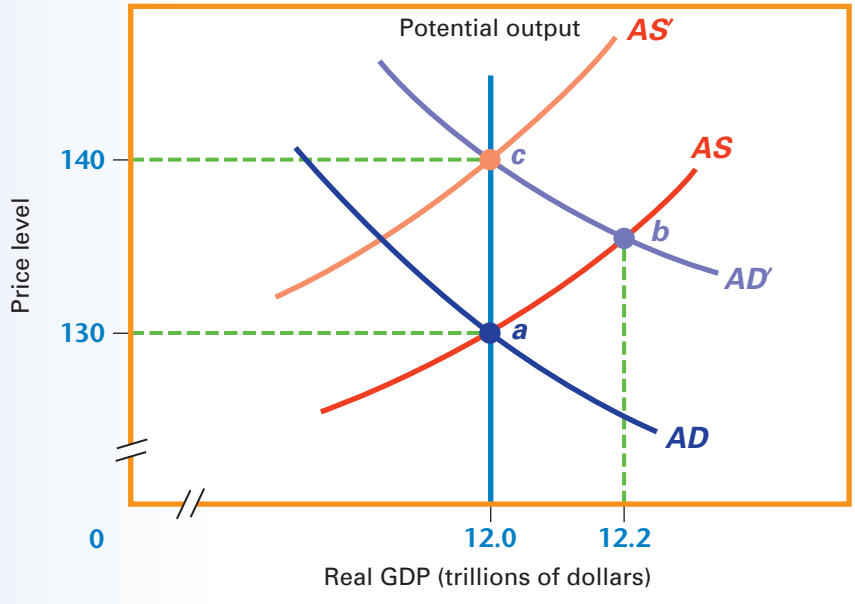
Calculating the Natural Rate of Unemployment

As noted earlier, the unemployment rate that occurs when the economy is producing its potential output is called *the natural rate of unemployment*. Before adopting discretionary fiscal policies, public officials must correctly estimate this natural rate. That's no easy task, and they may get it wrong.

For example, suppose the economy is producing its potential output of $12.0 trillion, as shown in Figure 15.3, where the natural rate of unemployment is 5 percent. Also suppose that public officials mistakenly think the natural rate of unemployment is 4 percent. They then attempt to increase

When Discretionary Fiscal Policy Underestimates the Natural Rate of Unemployment **Figure 15.3**

If public officials underestimate the natural rate of unemployment, they may attempt to stimulate aggregate demand even if the economy is already producing its potential output, as at point a. In the short run, this expansionary policy yields a short-run equilibrium at point b. At this point the price level and output are higher and unemployment is lower. The policy appears to be working. But at point b, output exceeds the economy's potential, and this creates inflationary pressure that shifts the economy's aggregate supply curve from AS back to AS′. Thus, attempts to increase production beyond potential GDP lead only to inflation in the long run.



output and reduce unemployment through discretionary fiscal policy. In the short run, the aggregate demand curve would shift out from AD to AD', moving the equilibrium point from a to b. In the long run, workers would negotiate higher wages and this would shift back aggregate supply from AS to AS'. Equilibrium would move from b to c. Thus, this policy of increasing aggregate demand to stimulate the economy would only lead to inflation in the long run.

The Problem of Lags

So far, the discussion has ignored the time required to implement discretionary fiscal policy. The assumption has been that the desired policy is selected and implemented in no time. The presentation also has assumed that, once implemented, the policy works fast. Actually, there may be long, sometimes unpredictable, lags at several stages in the process. These lags may reduce the effectiveness of discretionary fiscal policies.

RECOGNITION LAG

First, there is a **recognition lag**, which is the time it takes to identify a problem and determine how serious it is. Because a recession is not identified until more than six months after it begins and the average recession lasts only about 11 months, a typical recession will be more than half over before it is officially recognized as such.

DECISION-MAKING LAG

Even after it becomes clear that the economy is in trouble, Congress and the President must develop and agree on an appropriate course of action. Because policy makers usually take time deciding what to do, there is a **decision-making lag**. Changes in fiscal policy usually take months to approve, but they could take more than a year.

IMPLEMENTATION LAG

Once a decision has been made, the new policy must be introduced and executed. This often involves an **implementation lag**. For example, in early 2001, President Bush proposed a tax cut to stimulate the economy. Although Congress passed the measure relatively quickly, tax rebate checks were not mailed until six months after Bush introduced the legislation.



CHIP SOMEDEVILLA/GETTY IMAGES

Once government decision makers implement a policy, there is a lag before the full impact of the policy registers on the economy. What is this lag called, and how long does it usually last?

EFFECTIVENESS LAG

Once a policy has been implemented, there is an **effectiveness lag** before the full impact of the policy registers on the economy. Fiscal policy, once implemented, takes between 9 and 18 months to register its full effect.

These lags make it difficult to carry out discretionary fiscal policy. Discretionary fiscal policy to address a recession could take hold only after the economy has recovered on its own. Thus, discretionary fiscal policy aimed at increasing output and employment may end up just fueling inflation. These lags are reasons why policy makers need to be careful with discretionary fiscal policy.

recognition lag
The time needed to identify a macroeconomic problem

decision-making lag
The time needed to decide what to do once the problem has been identified

implementation lag
The time needed to execute a change in policy

effectiveness lag
The time needed for changes in policy to affect the economy

Fiscal Policy and Aggregate Supply

So far the discussion of fiscal policy has been limited to effects on aggregate demand. Fiscal policy also can affect aggregate supply, although often that effect is unintentional. For example, suppose the government increases unemployment benefits by imposing higher taxes on the employed. This redistributes income from workers to the unemployed. These offsetting effects may leave aggregate demand unchanged.

What about the possible effects of these changes on aggregate supply? Those who receive higher unemployment benefits have less incentive to find work, so they may search at a more leisurely pace. On the other hand, the higher marginal tax rate makes work less attractive. In short, the supply of labor could decrease as a result of offsetting changes in taxes and transfers. A decrease in the supply of labor would decrease aggregate supply, reducing output and employment.

Both automatic stabilizers, such as unemployment insurance and the progressive income tax, and discretionary fiscal policies, such as changes in tax rates, may affect individual incentives to work, spend, save, and invest, although these effects are usually unintended. Policy makers should keep these secondary effects in mind when they evaluate fiscal policies.

✓CHECKPOINT

What are the various lags involved with discretionary fiscal policy?

e-conomics

HACKERS VS. HACKER ATTACKERS

An "ethical hacker training course" currently is turning out graduates who know how to spot and defeat attempts at hacking into a computer system or, for that matter, initiate the attacks themselves. The course, an offering of InfoSec Academy, encourages students to develop cyber-crime skills in order to empower them to prevent it. Eighty hours of classroom and lab work are crammed into the seven-day course. Topics include how to break into password-protected systems, how to obtain credit card information from online databases, and many other hacker skills. A 250-question exam awaits at the end. Students have included government agents, Las Vegas police, defense contractors, and many others. Tuition of $3,500 buys training at the Academy, which has turned out more than 400 graduates without a single one turning to the dark side and becoming a cyber-criminal. Instead, graduates typically direct their skills in a legitimate fashion against their own systems to find intrusion loopholes that need closing.

THINK CRITICALLY

If you were in business, would you consider the $3,500 a good investment if it prevented a hacker from successfully attacking your computer system? Why or why not?

Sources: Pete Barlas, "Computer Security Tactic: To Catch a Snake, Become One," *Investor's Business Daily,* April 6, 2006; John McPartin, "Hackers Find Backers," *CFO Magazine,* January 2006.

Assessment 15.2

Key Concepts

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1. Why is the unemployment insurance program an example of an automatic stabilizer for the economy?
2. Inflation often results when the economy is growing rapidly. Why is it politically difficult for Congress to use discretionary fiscal policy by passing tax increases that could slow economic growth and reduce inflation?
3. If the government decided to extend unemployment benefits for an extra 13 weeks beyond the 26 that normally are paid, what would happen to the incentive unemployed people have to find work? How might this affect the economy?
4. Why might some economists believe that the decision-making lag is the longest of the lags involved with discretionary fiscal policy?
5. Suppose that the federal government borrowed and spent an additional $10 billion to stimulate the economy. Because of this extra government borrowing, interest rates increased by 1 percent on average. How might this increase affect the willingness of people and businesses to borrow and spend? What could this do to the effectiveness of the government's attempt to stimulate the economy?

Graphing Exercise

6. The so-called *misery index* is found by summing the unemployment rate and the inflation rate by year. Construct a line graph of the misery index based on data in the table. How does the misery index appear to be related to the economic conditions of the country?What would you expect to happen to the misery index if the economy began to grow rapidly?

Inflation, Unemployment, and Misery Index, 1996–2005

Year	Unemployment	Inflation	Misery index
1996	5.4%	3.3%	8.7%
1997	4.9%	1.7%	6.6%
1998	4.5%	1.6%	6.1%
1999	4.2%	2.7%	6.9%
2000	4.0%	3.4%	7.4%
2001	4.7%	1.6%	6.3%
2002	5.8%	2.4%	8.2%
2003	6.0%	1.9%	7.9%
2004	5.5%	3.3%	8.8%
2005	5.1%	3.4%	8.5%

Source: *Economic Indicators*, May 2006, pp. 12 and 24.

Think Critically

7. **History** In 1980 and 1981, there was a deep recession in the U.S. economy. Unemployment exceeded 10 percent. To try to speed the economy's recovery, Congress passed a law in 1982 that increased federal excise taxes on gasoline. The funds collected were intended to create additional jobs when they were spent to repair roads and highways throughout the nation. The tax increase went into effect on April 1, 1983. The first contracts were awarded to construction companies in the fall of that year. Actual construction began early in 1984, when the economy was already well into its recovery. Explain how this situation demonstrates a problem with using discretionary fiscal policy.

movers & shakers

Philip Knight *Chairman of the Board and Co-Founder, NIKE, Inc.*

Philip Hampson Knight grew up in Portland, Oregon. He attended the University of Oregon, majoring in accounting. Knight was a member of the school's track team—at the time, one of the best college teams in the country. His coach, Bill Bowerman, was always experimenting with running shoes in order to make his team faster. Not happy with the shoes available at that time, Bowerman began making his own shoes. "Since I wasn't the best guy on the team, I was the logical one to test the shoes," Knight explains.

After graduation and a year in the army, Knight enrolled in Stanford University's Graduate School of Business. It was there, as an assignment for one of his business classes, that Knight came up with the idea for Blue Ribbon Sports, later named NIKE. Once up and running, Blue Ribbon Sports operated by selling shoes from a van at high-school track meets and other athletic events. Within a few years, a retail site was secured, and the company was renamed NIKE. A local designer was paid $35 to come up with a logo, and the NIKE "swoosh" was born. The new shoe, with its new logo, debuted at the 1972 U.S. Olympic trials in Eugene, Oregon. The launch was a success. That year, $3.2 million worth of NIKE shoes were sold. Profits doubled each of the next 10 years. In 1980, NIKE passed Adidas to become the industry leader.



AP PHOTO/DON RYAN

Astronomical growth in the 1980s and 1990s was a result of Knight's idea to sign 21-year-old Michael Jordan to endorse a basketball shoe. It wasn't long before Air Jordans were must-have shoes among American youths. Later, athletes including Tiger Woods, Bo Jackson, Gabrielle Reese, LeBron James, and Andre Agassi kept NIKE sneakers in the minds of aspiring athletes, and the company's success continued. When speaking of his company's advertising campaigns, Knight stated, "We didn't invent it [advertising], but we ratcheted it up several notches." The company typically budgets $200 million each year for advertising and celebrity endorsements.

In fiscal year 2005, NIKE—still the world's number-one shoemaker—had sales of nearly $14 billion, with net income of $1.2 billion. The company employs 24,700 and manufactures and sells shoes for baseball, cheerleading, golf, volleyball and other sports. The company also sells Cole Haan dress and casual shoes, manufactures a line of athletic apparel and equipment, and operates numerous retail outlets. NIKE products are sold throughout the United States and in 160 other countries. The company's "swoosh" is recognizable today even without the name.

Although shy and aloof, Knight is known as one of the smartest brand builders ever. He inspires employees with the "NIKE Spirit" and motivates them to help take the company to the next level time after time. In addition to his trademark sunglasses—he is rarely seen without them—and wrinkled, casual wardrobe, one of Knight's trademark sayings is: "The trouble in America is not that we are making too many mistakes, but that we are making too few." His belief in making mistakes clearly has served him well.

SOURCE READING

Knight is fond of saying: "The trouble in America is not that we are making too many mistakes, but that we are making too few." Explain what you think he means by this. How did his belief in making mistakes serve him—and NIKE—well?

ENTREPRENEURS IN ACTION

Imagine you are an entrepreneur building your own company. What are some of the choices you likely will face in the process of helping your company grow? Explain what you would consider to be two good decisions regarding company growth and two bad decisions regarding company growth.

15.3 Federal Deficits and Federal Debt

Objectives

- Discuss why federal deficits have been common since the Great Depression.
- Distinguish between crowding out and crowding in.
- Discuss changes in the relative size of federal debt since World War II.
- Explain who bears the burden of the federal debt.

Overview

When governments spend more than they take in, budget deficits result. These deficits can have their own effect on the economy, beyond the stimulus provided by changes in spending and taxing. These deficits add up to the federal debt, which also can have its own effect on the economy. Policy makers usually focus on the immediate impact of a policy and mistakenly ignore the long-term effects.

Key Terms

crowding out

crowding in

In the News

The National Debt Clock

The old saying "time is money" usually refers to someone wasting money by wasting time. The phrase also could be applied to the U.S. National Debt Clock, which literally ticks out how much the U.S. national debt is increasing every second, down to the penny. The clock is located in New York City and was the brainchild of real estate developer Seymour Durst. In 1989, Durst funded the building of the National Debt Clock near Times Square to draw public attention to how much the debt was growing. At the time the clock started, the national debt stood at $2.7 trillion. It was even shut down for two years in the late 1990s when federal budget deficits were eliminated briefly, because the clock couldn't run backwards. After the debt began to rise again, the clock was turned back on, and the debt soon crept up to $6.1 trillion. Sometime before 2009, government borrowing is going to exceed $10 trillion, so the clock will need 14 digits—one more than the 13 it has now. The owners are not sure what they'll do as the clock adds $20,000 per second and $1,200,000 per minute, ticking toward obsolescence.

THINK ABOUT IT

Do you think the display of a National Debt Clock is a good idea? Why or why not?

Source: Felix Gillette, "On 44th Street, the Debt Piles Up—and So Do the Reporters," *CJRDaily,* March 30, 2006.

NETBookmark

The Office of Management and Budget provides the current year's federal budget, supporting documents, and links to additional sources of budget information on its web site. The budget web pages contain numerous easy-to-read charts and graphs indicating sources of revenue and types of spending. Access the budget and other budget documents for the current year through thomsonedu.com/school/econxtra. Choose one of the links and write a one-paragraph description of the document you access.

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Budget Deficits

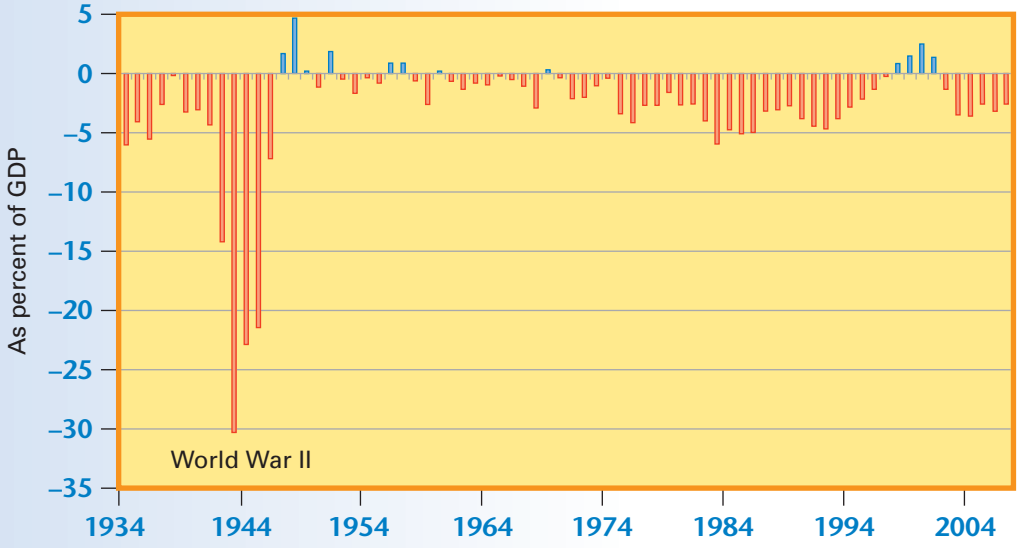
When government spending exceeds government revenue, the result is a *budget deficit*. The federal budget deficit measures the amount by which total federal spending for the year exceeds total federal revenues. The federal government finances a deficit by selling U.S. government securities, such as bonds. U.S. households, businesses, and foreigners buy them because the bonds earn interest and the U.S. government is considered the most trustworthy borrower in the world.

Federal Deficits Over the Years

Between 1789, when the U.S. Constitution was officially adopted, and 1930, the first full year of the Great Depression, the federal budget was in deficit 33 percent of the time. Federal deficits during that stretch occurred primarily during war years. Because wars involved much personal hardship, public officials were understandably reluctant to increase taxes to finance war-related spending. After a war, government spending dropped more than government revenue. Thus, deficits arising during a war were largely self-correcting once the war ended.

Since the Great Depression, the federal budget has been in deficit 84 percent of the time. Figure 15.4 shows federal deficits and surpluses as a percentage of

Federal Deficits and Surpluses as Percent of GDP Since 1934 — **Figure 15.4**



Between 1934 and 2007, the federal budget was in deficit in all but 12 years. The largest deficits relative to GDP occurred during World War II.

Source: Fiscal-year figures from *Economic Report of the President,* February 2006. Figures for 2006 and 2007 are projections based on the President's 2007 budget proposal and estimates from the Congressional Budget Office.

GDP since 1934. Unmistakable are the huge deficits during World War II.

The federal budget experienced a surplus from 1998 to 2001. However, before that it had been in deficit every year but one since 1960 and in all but 12 years since 1930. The average annual deficit grew from less than 1 percent of GDP in the 1960s to about 4 percent from 1980 to 1993, and a little less than 3 percent since 2002.

Why Is the Budget Usually in a Deficit?

Why has the federal budget been in deficit for all but 12 years since 1930? One obvious reason is that, unlike legislatures in 49 states, Congress is not required to balance the budget. Why does Congress approve budgets with deficits most years?

One widely accepted model of the public sector discussed in the previous chapter argues that elected officials try to maximize their political support. Voters like public spending programs but hate paying taxes. Therefore, spending programs win voters' support and taxes lose it. Public officials try to maximize their political support by spending more than they tax. This results in chronic deficits. Why were deficits more common after the Great Depression? The answer can be traced back to Keynes and his followers, who thought deficits were a justifiable result of fiscal policy. They were less worried about the long-run consequences of deficits. As Keynes once said, "In the long run we are all dead."

The Surplus of 1998–2001

What about the federal budget surpluses from 1998 to 2001? Where did they come from? Concern about rising deficits during the 1980s led to two tax hikes in the early 1990s. The Republican Congress elected in 1994 imposed more discipline on federal spending. Meanwhile, the economy experienced a healthy recovery resulting from technological innovation, the collapse of communism, market globalization, and the strongest stock market in history.

As a result of tax increases and a strengthening economy, revenues gushed into Washington, growing an average of 8.3 percent per year between 1993 and 1998. Meanwhile, federal spending was held in check, growing by an average of only 3.2 percent per year. By 1998, that one-two punch knocked out the federal deficit, a deficit that only six years earlier had reached $290 billion, a record to that point. The federal surplus grew from $69 billion in 1998 to $236 billion in 2000, the highest ever.

The economy entered a recession in March 2001. In the spring of 2001, the newly elected President George W. Bush pushed through an across-the-board cut in income tax rates to, in his words, "get the economy moving again." On September 11, 2001, 19 men in four hijacked airplanes ended thousands of lives and squelched chances of a strong rebound from the recession. The attacks grounded commercial flights across the country for weeks, and knocked down the travel industry for months. Stock markets and insurance markets also suffered.

Since peaking in early 2001, job totals fell 2.5 million by May 2003. The stock market went into a three-year funk. As the economy softened, automatic stabilizers reduced federal revenues and increased federal spending. The war in Iraq and domestic emergencies such as Hurricane Katrina increased federal spending. All this fueled the federal deficit, which exceeded $250 billion a year from 2003 to 2007. The budget surpluses seemed at that point like ancient history.

✓ CHECKPOINT

Why have federal deficits been so common since the Great Depression?

Deficits and Interest Rates

The Graphing Workshop

What effect do federal deficits have on interest rates? Recall that interest rates affect investment, a critical component of economic growth. Year-to-year fluctuations in investment are the primary source of instability in GDP. Figure 15.5 compares the percent change in real investment

and the percent change in real GDP since 1960. As you can see, investment fluctuates much more than GDP.

Crowding Out

How do federal deficits affect investment? Here's a way of looking at the question. Were you ever unwilling to go to a particular restaurant because it was too crowded? You simply did not want to put up with the hassle and long wait. You were "crowded out." Some version of this also can result from federal deficits.

The higher the deficit, the more the government must borrow. This increased demand for borrowed funds drives up the market rate of interest. Higher interest rates discourage, or *crowd out,* some private investment. **Crowding out** occurs when larger government deficits drive up interest rates and thereby reduce private investment. Decreased investment spending reduces the effectiveness of federal deficits that are intended to stimulate aggregate demand.

crowding out
Private investment falls when larger government deficits drive up interest rates

crowding in
Government spending stimulates private investment in an otherwise stagnant economy

Ask the Xpert!

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What is fiscal policy, and what is it supposed to accomplish?

Crowding In

Did you ever pass up an unfamiliar restaurant because the place was practically empty? If you had seen just a few more customers, you might have stopped in—you might have been willing to "crowd in." Similarly, businesses may hesitate to invest in a seemingly lifeless economy.

If government stimulates a weak economy, the business outlook may improve. As expectations grow more favorable, firms become more willing to invest. This ability of government deficits to stimulate private investment is sometimes called **crowding in**.

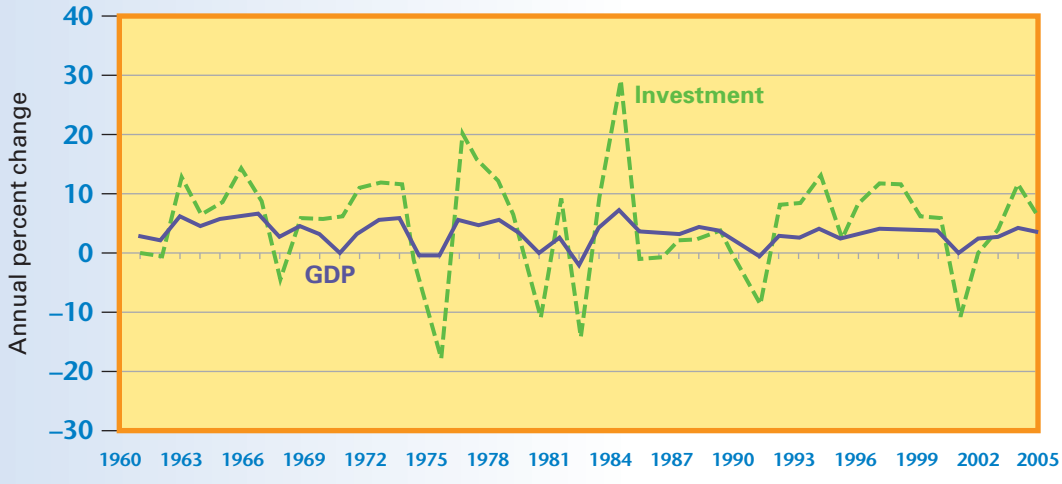
✓ CHECKPOINT

What's the difference between crowding out and crowding in?

Federal Debt

Federal deficits add up. It took 39 presidents, six wars, the Great Depression, and more than 200 years for the federal debt to reach $1 trillion, as it did in 1981. It took only three presidents and another 15 years for that debt to triple in real terms, as it did by 1996. The federal deficit measures the amount by which annual spending exceeds annual revenue. The *federal debt* measures the accumulation of past deficits, the total amount owed by the federal government. Federal debt adds up all federal deficits and subtracts federal surpluses.

Annual Percentage Changes in Real GDP and in Real Investment Since 1960 — **Figure 15.5**



Investment fluctuates much more from year to year than does GDP.

Source: U.S. Department of Commerce. Investment and GDP are in real terms—that is, adjusted for changes in the price level.

Gross Debt Versus Debt Held by the Public

In talking about the federal debt, economists often distinguish between gross debt and debt held by the public. The gross debt includes U.S. Treasury securities purchased by various federal agencies. Because this is debt the federal government owes to itself, economists often ignore it and focus instead on debt held by the public. Debt held by the public includes U.S. Treasury securities purchased by households, by firms, by other levels of government, by non-profit institutions, and by foreign entities. As of 2006, gross federal debt totaled $8.6 trillion, and debt held by the public totaled $5.0 trillion. Public debt in 2006 averaged $16,666 per U.S. citizen.

Debt Relative to GDP

One way to measure debt over time is relative to the economy's production and income, or GDP. In a sense, GDP shows the economy's ability to carry debt, just as household income shows that family's ability to carry a mortgage.

Figure 15.6 shows the public debt relative to GDP. The cost of World War II spiked the debt to more than 100 percent relative to GDP by 1946. *Despite the recent upticks, the federal debt held by the public relative to GDP dropped nearly two-thirds between 1946 and 2007.*

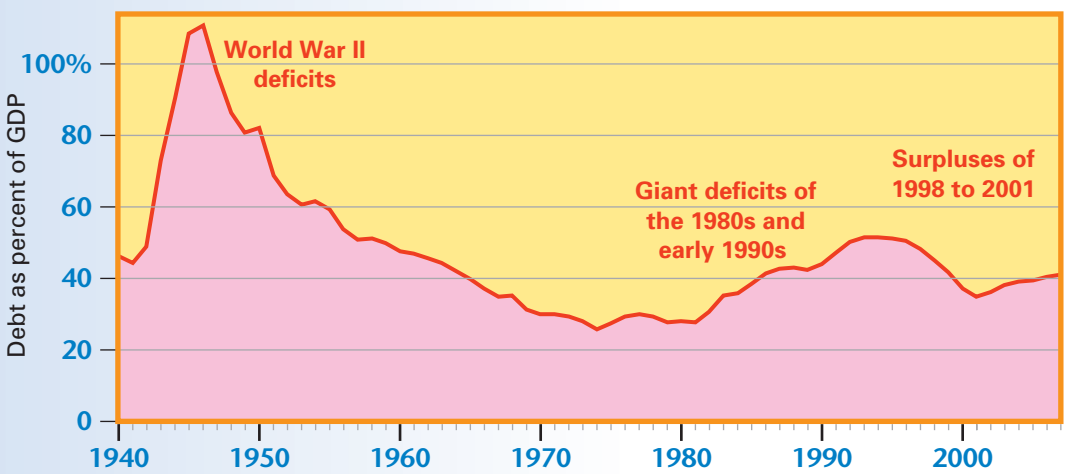
Note that usual measures of the federal debt do not capture all future liabilities. Social Security and other federal retirement programs promise benefits that must be paid from taxes or further borrowing.



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Social Security provides retirement income for people who have a record of making payments to the program. Are you confident the government will be able to pay your Social Security benefits when you retire? Why or why not?

Federal Debt Held by the Public as Percent of GDP, 1940 to 2007 — **Figure 15.6**



The federal debt held by the public relative to GDP dropped by nearly two-thirds between 1946 and 2007.

Source: Fiscal year figures from *Economic Report of the President,* February 2006, Table 79. Figures for 2006 and 2007 are projections.

✓ CHECKPOINT

What has happened to federal debt levels relative to GDP since World War II?

Economic Impact of the Debt

What is the impact of a large federal debt on the economy?

Debt and Interest Rates

The federal government seldom pays off any debt. When bonds mature, the government simply sells more bonds to pay off holders of maturing bonds. That's like you paying your credit card bill by using another credit card. Nearly half the debt is refinanced every year. With about $200 billion in bonds coming due each month, debt service payments are quite sensitive to changes in interest rates. Based on a $5.0 trillion debt held by the public in 2006, a one-percentage point increase in the interest rate eventually raises the federal government's annual interest costs by about $50 billion.

Interest payments on the federal debt were about 8 percent of the federal budget in 1978. Thanks to record-low interest rates, interest payments in 2006 were also about 8 percent of the federal budget. When interest rates rise from their low levels, so will the cost of servicing the federal debt.

Who Bears the Burden of the Debt?

Deficit spending is a way of billing future taxpayers for current spending. The federal debt raises questions about the morality of one generation's passing on to the next generation the burden of its borrowing. To what extent do budget deficits shift the burden to future generations?

WE OWE IT TO OURSELVES

It is often argued that the debt is not a burden to future generations because, although future generations must service the debt, those same generations will receive the debt service payments. In that sense, the debt is not a burden on future generations. It's all in the family, so to speak.

FOREIGN OWNERSHIP OF DEBT

But the "we-owe-it-to-ourselves" argument does not apply to that portion of the federal debt purchased by foreigners. Foreigners who buy U.S. government bonds forgo present consumption. Thus, they sacrifice now for a future payoff. *As foreigners buy more government bonds, this increases the burden of the debt on future generations of Americans because future debt service payments no longer remain in the country.* Foreigners owned about 45 percent of all federal debt in 2005, compared to 20 percent in 1994. Thus, the burden of the debt on future generations of Americans is growing, because a growing share of debt repayments will go to foreigners.

✓ CHECKPOINT

Who bears the burden of the federal debt?

Investigate Your Local ECONOMY

Interview three or four adults about the federal budget deficit. Ask if they know the size of the federal deficit. Ask if they think having a budget deficit is a good idea or a bad idea for the economy, and why. Then compare the answers you receive with the answers your classmates receive. Did you uncover any trends? If so, what are they?

ETHICS IN ACTION

Preventing Deficits from Harming Future Generations

One common concern about deficit spending is that it will place an unfair burden on future generations. One economist argued that people can prevent this from happening by saving more and spending less now. Harvard economist Robert Barro argued that when governments increase deficits, they generally keep taxes low. Eventually, however, taxes on future generations will have to be raised to help service the debt that results from current deficits. If no one cared about future generations, then adults today would support deficit spending because they would be dead before the higher tax bills would come due. Barro claimed that people concerned about the well-being of their children and grandchildren will offset the future harm of deficits by spending less and saving more today. This saved money will be passed along to their children and grandchildren, who can use it to pay the higher taxes that will come due when they are adults. Many economists disagree that Barro's idea really works, however. Many point out that during the 1980s, when deficits were very high, people's tendency to save money was very low. Barro's supporters argue that this may have been because people in the 1980s were optimistic about the future growth of the economy and believed that the deficits would eventually be offset by lower government spending, not by higher taxes in the future. Barro's critics also argue that the growing number of people with no children may be less concerned about the welfare of future generations. Also, his theory assumes a great deal of public knowledge and understanding about the national debt and its effects on the future. One survey found that few adults had any idea about the size of the federal deficit. This would make it very difficult for them to plan ahead and spend with the idea of protecting future generations in mind. Perhaps the ultimate argument against his theory lies in the fact that saving in recent years has decreased even in the face of record federal deficits.

THINK CRITICALLY

Do you agree with Barro's supporters or his critics? Explain your reasons.

Sources: Robert J. Barro, "The Ricardian Approach to Budget Deficits," *Journal of Economic Perspectives* 3, Spring 1989; David Rosenbaum, "Congress Agrees on Final Details of Tax-Cut Bill," *New York Times,* May 26, 2001.



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Do you think the federal government is acting responsibly in passing debt on to future generations? Why or why not?

Assessment 15.3

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Key Concepts

1. In 1930, the federal debt was just over $16.8 billion. Why doesn't this fact provide much information about the size or importance of this debt? What other information would you need in order to evaluate the debt's importance?
2. Why didn't the across-the-board income tax cut of 2001 immediately cause people to spend more and get the economy moving?
3. The Social Security system has purchased billions of dollars of U.S. Treasury bonds. Some economists believe this is simply a matter of taking money from one of the government's pockets and putting it in another. Others do not agree. When the Social Security system cashes in its bonds to pay benefits to retired workers in the future, where will the funds come from? Do these bonds really impose less of a burden on Americans than do other types of debt such as bonds issued by state and local governments or bonds issued by corporations?
4. If interest rates increased by 3 percent across the board, what would happen to annual interest payments on the federal debt owned by the public?

Graphing Exercise

5. From 1980 to 2005, tax payments received by the Social Security system far exceeded the amount paid to beneficiaries. Money that the system accumulated was invested in government bonds and held in the Social Security Trust Fund to be used to make future payments. Use the data in the table to construct a line graph that shows the growth in this trust fund. Why will this trend toward larger balances in the Social Security Trust Fund be reversed in the future?

Think Critically

6. **Math** The federal debt was approximately $8.6 trillion dollars in 2006. If this debt grew at a rate of 3 percent per year in each of the following 10 years, how much would the debt total be in 2016? Should such an increase in the debt be a concern for U.S. citizens? Why or why not?

Social Security Trust Fund Balance, 1980–2005 (in billions of dollars)

Year	Balance
1980	$ 22.8
1985	$ 35.8
1990	$ 214.2
1995	$ 458.5
2000	$ 931.8
2005	$1,663.0

CONNECT TO HISTORY



Alexander Hamilton and the Question of the National Debt

Economic issues played a major role in causing the American Revolution, and the United States emerged from the struggle in poor financial shape. It had fought the war on borrowed money. It stopped paying interest on its bonds. It was behind in paying soldiers. It also had issued more than $200 million in near worthless money, or "continentals." When representatives from the various states met in Philadelphia during the summer of 1787 to address these problems, the result was a new constitution. The new U.S. Constitution gave the federal government certain powers to tax, borrow, and spend.

President George Washington appointed Alexander Hamilton as the new country's first secretary of the treasury in 1789. Hamilton was not the first choice. Robert Morris, the "financier of the Revolution," turned Washington down and recommended Hamilton. Hamilton realized he needed to establish the country's credit by resolving the problems of the nation's debt. The United States and its credit were held in low esteem around the world, and no one was willing to lend money to the country. Hamilton realized that establishing the nation's credit would enhance the nation's prosperity and provide an incentive for individuals and nations to invest in the United States. For Hamilton, federal debt was desirable, as he felt it would bind the moneyed class to the new government. Hamilton had written to Morris, "A national debt, if not excessive, will be to us a national blessing."

Three types of debt sprang from the Revolution: (1) federal debt owed to foreigners, (2) federal debt owed to Americans, and (3) state debts. There was no question about paying the foreign debt at face value. Domestic debt had depreciated to about 25 cents on the dollar, but Hamilton proposed to pay it at face value, or full value, as well. Because many speculators who had purchased the depreciated certificates would stand to profit, some in Congress resisted this solution. They felt it would enrich speculators rather than those who originally had purchased the debt. Despite the opposition, Hamilton's solution prevailed. He proposed to repay the debt by issuing new bonds for the full amount of the old debts. The new debt would be repaid over time from tariff revenues.

Hamilton also proposed that the federal government assume, or promise to repay, state debts. Much of that debt had been incurred during the Revolution for the benefit of all the states. In addition, wealthy residents held many state bonds. If their investments could be shifted from the states to the federal government, he believed their long-term interests in the nation's success would be ensured. Southern states defeated these proposals four times, putting Hamilton's entire financial plan in danger. It was only when he gained Thomas Jefferson's support by agreeing to locate the capital to the south—in the area of Washington, D.C.—that Hamilton secured enough votes to pass his plan.

Hamilton was successful, and the nation's credit was insured. By 1794, the United States had a high credit rating and its bonds were highly sought.

THINK CRITICALLY

The perfect solution at one time in history may not be the best solution in another. Hamilton saw that the national debt could be a positive factor in the nation's economy. How does that differ from attitudes today?

15 Chapter Assessment

Summary

15.1 The Evolution of Fiscal Policy

a Fiscal policy is intended to move the economy toward full employment at its potential output with price stability. It does this primarily by working to shift aggregate demand. The *potential output* is the economy's level of production is sustainable in the long run. Some unemployment will occur at potential output. This level of unemployment is called the *natural rate of unemployment.*

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b When output is below its potential, government may use fiscal policy to stimulate production by increasing its spending or cutting taxes. If output exceeds its potential, thus creating inflationary pressure, government may use fiscal policy to reduce production by cutting its spending or increasing taxes.

c Prior to the Great Depression of the 1930s, *classical economists* believed that natural market forces would cause the economy to automatically recover from recessions in the long run without government intervention. During the Great Depression, it became apparent the classical economic theory had some problems.

d Keynes developed a theory in the 1930s that argued prices, wages, and interest rates were "sticky" and would not quickly fall in a recession to bring about economic growth. Keynes argued that it is the responsibility of the government to get the economy moving again by adjusting government spending and taxes.

15.2 Fiscal Policy Reconsidered

a Fiscal policy may either be automatic or *discretionary. Automatic stabilizers,* once enacted, work year after year without new legislation. An example of automatic fiscal policy is the progressive federal income tax. When the economy is in recession, people pay a smaller share of their reduced incomes in tax while in an expansion their greater incomes force them into higher tax brackets.

b There are a number of limitations on the effectiveness of fiscal policy. Because fiscal policy is designed to influence aggregate demand, it is not effective in fighting stagflation, when there is both unemployment and inflation. Time lags that slow the execution and impact of fiscal policy reduce its effectiveness.

c Changes in aggregate demand that result from fiscal policy decisions may have unforeseen effects on aggregate supply. When unemployed workers are provided with additional weeks of unemployment compensation, for example, they may decide to take a more leisurely approach to their job search. Workers who must pay higher taxes to support the extension of benefits to the unemployed may decide to work a little less.

15.3 Federal Deficits and Federal Debt

a Before the Great Depression, the federal government normally spent only as much money as it collected in taxes, except in time of war. Since the 1930s, government spending has exceeded revenues in most years. These annual deficits have accumulated over time to create a federal debt that totaled $8.6 trillion by 2006.

b In most of the 1980s and 1990s, the federal deficit averaged about 4 percent of GDP. This trend was reversed between 1998 and 2001, when tax hikes of the early 1990s and reduced spending growth temporarily erased annual deficits. A recession in 2001 triggered automatic stabilizers that brought back the federal deficits beginning in 2002. Tax cuts in 2001 and 2003 to revive the economy also contributed to deficits, which averaged 3 percent of GDP from 2002 to 2007.

c Deficit spending may contribute to higher interest rates. When the federal government borrows additional money to fund a deficit, interest rates often have increased. These higher interest rates can discourage borrowing and spending by businesses and consumers.

d Some economists argue that the federal debt should be evaluated in terms of our nation's ability to carry it, as reflected by GDP.

Review Economic Terms

Choose the term that best fits the definition. On separate paper, write the letter of the answer.

_____ **1.** Private investment falls when larger government deficits drive up interest rates

_____ **2.** The unemployment rate when the economy is producing its potential level of output

_____ **3.** Congressional changes in spending or taxing to promote macroeconomic goals

_____ **4.** The economy's maximum sustainable output in the long run

_____ **5.** The time needed for changes in government policy to affect the economy

_____ **6.** A group of laissez-faire economists, who believed that economic downturns were short-run problems that corrected themselves in the long run through natural market forces

_____ **7.** The time needed to execute a change in government policy

_____ **8.** Matching annual spending with annual revenue, except during war years

_____ **9.** The time needed for the government to decide what to do once an economic problem has been identified

_____**10.** Any change in fiscal policy affects aggregate demand by more than the original change in spending or taxing

_____**11.** Government spending and taxing programs that, year after year, automatically reduce fluctuations in disposable income and thus in consumption over the business cycle

_____**12.** The time needed to identify a macroeconomic problem

_____**13.** Government spending stimulates private investment in an otherwise lifeless economy

a. annually balanced budget

b. automatic stabilizers

c. classical economists

d. crowding in

e. crowding out

f. decision-making lag

g. discretionary fiscal policy

h. effectiveness lag

i. implementation lag

j. multiplier effect

k. natural rate of unemployment

l. potential output

m. recognition lag

Review Economic Concepts

14. An economy's *potential output* is reached

a. when there is no unemployment.

b. at the natural rate of unemployment.

c. when there is only cyclical unemployment.

d. at the frictional rate of unemployment.

15. True or False Output can only exceed the potential rate in the short run.

16. When output is less than the potential rate, there is a(n) __?__ gap in the economy.

17. The *natural rate of unemployment* in the United States is estimated to fall between
    a. 2 and 3 percent.
    b. 3 and 4 percent.
    c. 4 and 5 percent.
    d. 5 and 6 percent.

18. *Classical economists* believed that the federal government should have a(n) __?__ budget.

19. **True or False** *Classical economists* believed that in a recession prices, wages, and interest rates would fall, and this would bring the recession to an end.

20. Keynes developed a theory that was intended to address which problem during the Great Depression?
    a. unemployment
    b. inflation
    c. government deficits
    d. high interest rates

21. Keynes believed that the __?__ would cause an increase in government spending or reduction in taxes to have a larger impact on aggregate demand.

22. Which of the following is an automatic stabilizer for the economy?
    a. Congress decides to increase welfare benefits during a recession.
    b. An increase in income tax rates is passed by Congress during a period of inflation.
    c. More welfare compensation is paid because more people are unemployed in a recession.
    d. Congress decides to require people to work until they are 68 years old to collect their full Social Security benefit.

23. **True or False** According to Keynes, prices and wages are quite inflexible—they are "sticky."

24. Which of the following is an example of *discretionary fiscal policy*?
    a. Income tax payments grow during an economic expansion.
    b. Congress spends an extra $2 billion to provide jobs for unemployed workers.
    c. Fewer workers receive unemployment compensation payments in an expansion.
    d. More people apply for and receive welfare benefits in a recession.

25. **True or False** Keynes believed that it was necessary for the government to balance its budget every year.

26. __?__ takes place when there are both high rates of inflation and high unemployment.

27. **True or False** Because of lags, it is difficult for the government to implement *discretionary fiscal policy* effectively.

28. Which of the following situations would indicate that the economy is below its *potential output*?
    a. Many workers have been laid off because of a decline in sales.
    b. A large number of construction workers are unemployed each February.
    c. In June, many graduating students spend several months looking for a job.
    d. There are many people who need to be trained to qualify for job openings.

29. The time that it takes the government to realize that there is a problem in the economy is called the __?__

30. The federal government accumulated most of its debt during the 20 years following
    a. 1920.
    b. 1940.
    c. 1960.
    d. 1980.

31. **True or False** Between 1946 and 2007, the federal debt held by the public as a percentage of GDP fell more than half.

32. **True or False** *Crowding out* refers to people and businesses choosing to borrow and spend less money because of higher interest rates that result from greater federal borrowing.

33. Gross debt includes debt the federal government owes to itself, whereas debt held by the public refers only to debt held by
    a. households and firms.
    b. non-profit institutions.
    c. foreign entities.
    d. all of the above.

Apply Economic Concepts

34. **Evaluate Government Policy** In the late 1970s, President Jimmy Carter and Congress expanded spending under the Comprehensive Employment and Training Act (CETA) to provide temporary employment to as many as 500,000 unemployed workers. Most of this money was made available to state and local governments that were supposed to hire and train workers so that they would eventually be able to find permanent employment working for private industry. Explain why this was an example of discretionary fiscal policy. How successful do you imagine this program was? Investigate the program at your library or online to find out whether your expectations were correct.

35. **"Sticky" Wages** Imagine that you are 20 years older and married with two children. You have purchased a car, a house, and furniture on credit. Most of your income goes to pay bills. You work for a business where you are a member of a labor union. Your contract states that you will be paid $13.50 per hour. Yesterday your employer announced that its sales have declined 30 percent and that if workers don't agree to a 15 percent pay cut, the business will lay off 10 percent of its employees and may fail in the next year. Would you agree to the pay cut? Explain your answer. Why are wages "sticky"?

36. **Calculate the Impact of the Multiplier Effect** In 1993, President Bill Clinton asked Congress to approve an additional $15 billion in spending to repair and upgrade the nation's highways. In addition to improving the nation's roads, President Clinton argued that this spending would increase output and employment in the economy. Assume that each person who received any of this extra spending as income would have spent 80 percent of it. Describe how the multiplier effect would have increased the total increase in spending to far more than the original $15 billion President Clinton wanted to spend. What does this show about the importance of changes in government spending?

37. **Explain the Benefits of Unemployment Compensation** When there is a downturn in the economy, unemployment grows and more workers receive unemployment compensation. How do these payments benefit workers who have not lost their jobs?

38. **Evaluate a Proposed Constitutional Amendment** Members of Congress have from time to time argued in favor of a constitutional amendment that would require the federal government to maintain a balanced budget except in times of war. Discuss whether you think this would be a good idea. Be sure to explain the reasons for your point of view.

39. **Sharpen Your Skills: Graphs of Interest on the National Debt** Interest on the national debt is an important part of the federal budget. The amount of this cost depends on the size of the federal debt and the interest rate the government pays on the debt. Use the data in the table to construct three pie graphs showing the part of the federal budget that was devoted to paying interest in 1950, 1980, and 2000. Why did this proportion of the budget first decline and then grow?

Payments on the National Debt as a Percent of the Federal Budget 1950, 1980, and 2000

Year	Interest Payment as a Percent of the Federal Budget
1950	14.5%
1980	8.9%
2000	12.5%



40. Access **EconDebate Online** at thomsonedu.com/school/econxtra. Find the article under Fiscal Policy entitled "Promises, Promises." Read the article, and then write a sentence describing what the article says is the problem with Social Security. What did President Bush propose as a solution to this problem?

16 Money and Banking

16.1 Origins of Money

16.2 Origins of Banking and the Federal Reserve System

16.3 Money, Near Money, and Credit Cards



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CONSIDER

Why are you willing to exchange a piece of paper bearing Benjamin Franklin's portrait and the number 100 in each corner for something worth at least $100 to you?

Why is paper money more efficient than gold coins?

Why was a Montana bank willing to cash a check written on a clean but frayed pair of underpants?

How do banks create money?

When were thousands of different currencies circulating in the U.S. economy?

Why is there so much fascination with money, anyway?

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16.1 Origins of Money

Objectives

- Trace the evolution from barter to money.
- Describe the three functions of money.
- Identify the properties of ideal money.

Overview

The word *money* comes from the Latin "Moneta," the name of the Roman goddess in whose temple coins were minted. Money has come to symbolize personal and business finance. You can read *Money* magazine and the "Money" section of *USA Today*. You can watch TV shows such as *Moneyline* and visit hundreds of web sites about money, such as www.moneyfactory.gov, the federal agency that prints money. With money, you can express your preferences—after all, money talks. When it talks, it says a lot, as in "Put your money where your mouth is."

Key Terms

medium of exchange

commodity money

In the News

The Price of Admission to the Barter

Can you imagine Kevin Spacey, Meg Ryan, and Quentin Tarantino walking around with signs reading "Will work for food"? Well, many famous actors, actresses, and directors did just that during the Great Depression at the Barter Theatre in Abingdon, Virginia. Created in 1933 under the Depression-era "Will Work for Food" program, the Barter was founded by a troupe of unemployed actors who headed south from New York to offer live theater in exchange for produce. With an original admission price equivalent to 35 cents in barter, the first ticket was purchased with a pig. Community members, including a local barber, provided services as well in return for tickets. Tradition has it that the first season ended with a net profit of $4.35 and a total weight gain among the players of some 300 pounds. Today, cash generally has replaced produce as the medium of exchange at the Barter. Nonetheless, in a recent season, nonperishable food items were accepted as payment of admission for several performances and donated to a local food bank.

THINK ABOUT IT

Why was barter originally used at the Barter Theatre? Why do you think cash eventually replaced barter as the main admission medium?

Source: *Knoxville News-Sentinel,* June 22, 2003.

The Evolution of Money

In the beginning, there was no money. The earliest families were self-sufficient. Each produced all it consumed and consumed all it produced, so there was no need for exchange. Without exchange, there was no need for money. When specialization first emerged, as some families farmed and others hunted, farmers and hunters began to trade. Thus, the specialization of labor resulted in exchange. The kinds of goods traded were limited enough that people easily could exchange their products directly for other products. This is a system called *barter,* which you read about in Chapter 2.

Problems with Barter

As long as specialization was limited to just a few goods, mutually beneficial trades were easy to discover. As the economy developed, however, greater specialization increased the kinds of goods produced. As the variety of goods increased, so did the difficulty of finding mutually beneficial trades. For example, a heart surgeon in a barter economy would have to find people willing to accept a heart operation in exchange for what the surgeon wanted. Barterers also had to agree on an exchange rate. Negotiating such exchanges every time the surgeon needed to buy something would prove difficult and time consuming. *Greater specialization increased the transaction costs of barter.*

A huge difference in the values of the units to be exchanged also made barter difficult. For example, suppose a hunter wanted to exchange 2,000 hides for a home. Anyone would be hard-pressed to find a home seller in need of that many hides.

The Birth of Money

The high transaction costs of barter gave birth to money. Nobody actually recorded the emergence of money, so we can only speculate about how it developed. Through barter experience, traders may have found that certain goods always had ready buyers. If a trader could not find a good that he or she desired, some good with a ready market could be accepted instead.

Thus, traders began to accept certain goods not for personal use but because the goods were readily accepted by others and so could be held for exchange later. For example, corn might have become accepted because traders knew that corn was always in demand. As one good became generally accepted in return for all other goods, that good began to function as money. *Money* is anything that is widely accepted in exchange for goods and services.

✓ CHECKPOINT

How did money evolve from barter?



Working with a partner, role-play a barter situation. One partner will have an MP3 player to barter. The other student will barter another item or items for the MP3 player. After completing your role-play barter, compare your results with those of other students. Were the items bartered for the MP3 players of comparable value?

Three Functions of Money

Money fulfills three important functions: it is a *medium of exchange,* a *unit of account,* and a *store of value.*

Medium of Exchange

If a society, by luck or by design, can find one good that everyone will accept in exchange for whatever is sold, traders

can save time, disappointment, and sheer aggravation. Suppose corn plays this role—a role that clearly goes beyond its role as food. Corn becomes a medium of exchange because it is accepted in exchange by all buyers and sellers, whether or not they want corn to eat. A **medium of exchange** is anything that is generally accepted as payment for goods and services. The person who accepts corn in exchange for some product believes corn can be used later to purchase whatever is desired.

In this example, corn is both a *commodity* and *money*, so corn is called **commodity money**. The earliest money was commodity money. Gold and silver have served as money for at least 4,000 years. Cattle were used as money, first by the Greeks, and then by the Romans. In fact, the word *pecuniary* (meaning "of or relating to money") derives from the Latin word for cattle, *pecus*. Salt also served as money. Roman soldiers received part of their pay in salt. The salt portion was called the *salarium*, the origin of the word *salary*. Commodity money used at various times included wampum (polished shells strung together) and tobacco in colonial America, tea pressed into small cakes in Russia, and palm dates in North Africa.

Unit of Account

As one commodity, such as corn, became widely accepted, it also served as a *unit of account,* a standard on which to base prices. The price of shoes or pots or hides could be measured in bushels of corn. Thus, corn became a common denominator, a yardstick, for measuring the value of all goods and services. Rather than having to determine the exchange rate between each good and every other good, as was the case in a barter economy, buyers and sellers could price everything using a common measure, such as corn.

Store of Value

Because people do not want to buy something every time they sell something, the purchasing power acquired

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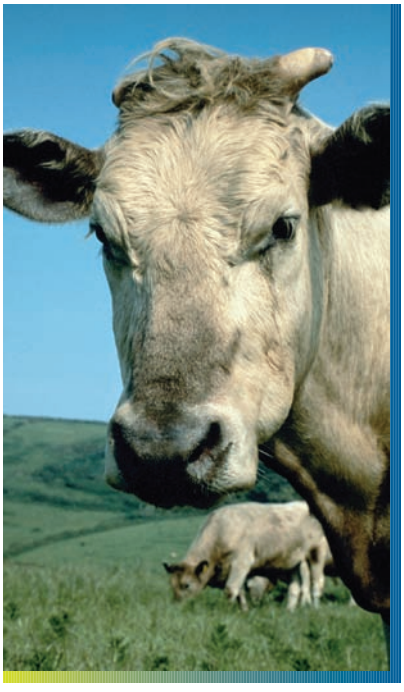
What are the functions of money?

medium of exchange

Anything generally accepted by all parties in payment for goods or services

commodity money

Anything that serves both as money and as a commodity, such as gold



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Why were cattle, tobacco, and corn all useful as commodity money?

through a sale must somehow be preserved. Money serves as a *store of value* when it retains purchasing power over time. The better it preserves its purchasing power, the better money serves as a store of value.

To understand the store-of-value function of money, consider the distinction between a stock and a flow. A *stock* is an amount measured at a particular point in time, such as the amount of food in your refrigerator this morning, or the amount of money you have with you right now. In contrast, a *flow* is an amount received or expended within a period of time, such as the calories you consume per day, or the income you earn per week.

Income, a flow, has little meaning unless the period is specified. For example, you would not know whether to be impressed that a friend earns $300 unless you know whether this is earnings per month, per week, per day, or per hour. Don't confuse money with income. *Money* is a stock measure, and *income* is a flow measure.

✓ CHECKPOINT

What are three functions of money?

Commodity Money

The introduction of commodity money reduced the transaction costs of exchange compared with barter. Commodity money does involve some transaction costs, however. These transaction costs are reflected by the following limitations of commodity money.

Limitations of Commodity Money

The ideal money is durable, portable, divisible, of uniform quality, has a low opportunity cost, does not fluctuate wildly in value, and is in limited supply. As you will see, most commodity money falls short of these ideals.

DURABLE

If the commodity money is perishable, as is corn, it must be properly stored or its quality deteriorates. Even then, it won't last long. The ideal money is *durable.*

PORTABLE

If the commodity money is bulky, exchanges for major purchases can become unwieldy. For example, if a new home cost 5,000 bushels of corn, many cartloads of corn would be needed to purchase that home. The ideal money is *portable.*

DIVISIBLE

Some commodity money is not easily divisible into smaller units. For example, when cattle served as money, any price involving a fraction of a cow posed an exchange problem. The ideal money is *divisible.*

UNIFORM QUALITY

If commodity money like corn is valued equally in exchange, regardless of quality, people will keep the best corn and trade away the rest. Over time, the quality remaining in circulation deteriorates and becomes less acceptable. The ideal money is of *uniform quality.*

LOW OPPORTUNITY COST

Commodity money usually ties up valuable resources, so it has a relatively high opportunity cost compared with, say, paper money. For example, corn that is used for money cannot at the same time be eaten. The ideal money has a *low opportunity cost.*

SUPPLY OR DEMAND MUST NOT FLUCTUATE ERRATICALLY

The supply and demand of commodity money determine the prices of all other goods. A record harvest would increase the supply of corn. An increase in the popularity of corn as food would increase the demand for corn. Each change would alter the price level measured in corn. Erratic fluctuations in the supply or demand for corn limit its usefulness as money, particularly as a unit of account and as a store of value. The



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Evaluate the use of metal coins in terms of the seven qualities of the ideal money.

supply or demand for the ideal money *should not fluctuate wildly.*

LIMITED SUPPLY

Because the value of money depends on its limited supply, anything that can be gathered or produced easily would not serve well as commodity money. For example, tree leaves or common rocks would not serve well as commodity money. The ideal money should be in *limited supply.*

Coins

Measuring a unit of commodity money often was quite natural, as in a bushel of corn or a head of cattle. When rock salt served as money, it was cut into bricks. Because salt was usually of consistent quality, a trader could simply count the bricks to determine the amount of money. However, when silver and gold were used as money, both their quantity and quality were open to question. When these precious metals were combined with cheaper metals, their quality lessened. Thus, the quantity and the quality of the metal had to be determined with each exchange.

This quality-control problem was solved by coining silver and gold. *Coinage determined both the amount and quality of the metal.* The earliest known coins appeared in the seventh century B.C. in Asia Minor to assist sea trade. The use of coins allowed payment by count rather than by weight. Coins were attractive because they were durable and relatively easy to carry. They also contained precious metals, so these coins were valuable as commodities even aside from their value as money. The table on which money was counted during this era came to be called the *counter,* a term still used today.

Originally, the power to coin was vested in the feudal lord, or *seignior*. If the exchange value of the coin exceeded the cost of making it, minting coins became a source of revenue to the seignior. Revenue earned from coinage is called *seigniorage* (pronounced "seen′-your-edge").

Token money is money whose exchange value exceeds its cost of production. Coins and paper money now in circulation in the United States are token money. For example, a quarter (a 25-cent coin) costs the U.S. Mint only about 5 cents to make. Coin production alone nets the federal government more than $500 million per year in seigniorage. Paper money is a far greater source of seigniorage, as you will learn later.

NET Bookmark

The Legal Tender Modernization Act was introduced on July 17, 2001, by Rep. Jim Kolbe of Arizona. Among other changes to the U.S. legal tender system, the bill proposes to discontinue the circulation of the penny. Some groups, such as the Americans for Common Cents, don't want to eliminate the use of the penny. Access this group's web site through thomsonedu.com/school/econxtra. According to the web site, how much seigniorage did the penny earn over the 15-year period? (http://www.pennies.org/profit.html).

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✓ CHECKPOINT

What seven properties would an ideal money exhibit?

ETHICS IN ACTION

Crime at the ATM: Who's Responsible?

In an effort to reduce ATM crime, one ATM maker has gone to the consumer with information as to where and how ATM-related crime occurs. Such details have been available to ATM providers for years, but they were not often employed to protect the card user. Common crimes mentioned in the manufacturer's report include: *card theft*—where thieves put a card-trapping device in the insertion slot of an ATM so that it seemingly keeps the user's card; *skimming*—capturing the magnetic strip data on a card by attaching a small electronic reader in line beside the ATM's actual reader; *overlooking*—thieves look over the shoulder of the user either by standing behind them or through high-powered scopes from a considerable distance; *fake pin pads*—at times used in combination with card trappers, a fake numerical pad is overlaid on the ATM to record user PINs; *false facades*—thieves place their own front on the ATM and then steal any deposits. The report notes that providers of ATMs can help combat these scams by: frequent inspections of their machines, placing mirrors on the front of the ATMs so that users can notice unusual behavior behind them, paying extra to incorporate recessed key pads and display areas in their machines, creating privacy filters that obscure the ATM screen, and, finally, properly placing and arranging the immediate surroundings of their machines. Consumers can help themselves by not using an ATM near shrubbery, vision barriers, or the end of a building; by being wary of people observing the transaction, offering help, or following the user; by not using an odd-looking ATM or one that requires unusual procedures; and by blocking lines of sight to the keypad where you enter your PIN.

THINK CRITICALLY

Is it the ethical responsibility of the maker, provider, or user of the ATM to take the steps to avoid ATM scams such as those mentioned above?

Source: "Thieves Can Steal Cards, PINs at the ATM," *Alert Consumer,* Copley News Service, November 20, 2005.

Assessment 16.1

Key Concepts

1. Why could it be difficult for you to exchange your collection of 500 CDs for a good-quality used car in a world with no money?
2. Why have wheat and corn been used as commodity money in the past while strawberries and lettuce have not?
3. On the Pacific island of Yap, commodity money took the form of donut-shaped pieces of stone that could weigh a ton or more. In what ways did these stones fall short of being ideal forms of money?
4. At certain times in history the value of the gold or silver in coins has been greater than the face value of the coins themselves. What did this give people an incentive to do? How would this have affected the economy?
5. What would happen if there were more than one type of commodity money in use—one that people trusted to hold its value and one that they did not? If you had some of both types of money, which would you spend and which would you save? How would this affect the economy?

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Graphing Exercise

6. Fred has an electric saw he would like to trade for a tire for his boat trailer. Mary has a tire for a boat trailer that she would be willing to trade for an electric lawn mower. Rachel has an electric lawn mower she would like to trade for a portable TV. Tony has a portable TV he would be willing to trade for an electric saw. Draw a chart that shows the trades that must take place for each of these people to obtain the product he or she wants. Explain why barter is not an efficient way to carry out complicated transactions.

Think Critically

7. **History** When gold and silver coins were the primary type of money in circulation, merchants often weighed the coins before accepting them. Why do you think they did this? What problem of using gold or silver coins as money does this situation demonstrate?
8. **English** You probably have either read or seen a televison production of *A Christmas Carol,* a short novel writen by Charles Dickens, published in 1843. In his book, Dickens told the story of Ebenezer Scrooge, a miser who accumulated wealth more for the sake of having money than to be able to use it to buy goods or services. Scrooge was regarded by all who knew him as a sour old man who hated everything about Christmas. His lack of charity kept even the poorest of the poor from asking him for help. However, after being visited by the ghosts of Christmas Past, Christmas Present, and Christmas Yet to Come, Scrooge came to view his wealth in a different way. Write an essay in which you identify and explain Scrooge's original point of view about the three functions of money (medium of exchange, unit of account, and store of value). How did the the three Christmas ghosts change his perspective on money? If you have never read this publication, it can be found in almost every library or online, and it is only 124 pages long.

16.2 Origins of Banking and the Federal Reserve System

Objectives

- Describe how the earliest banks made loans.
- Based on whom they lend to, identify two types of depository institutions.
- Explain when and why the Federal Reserve System was created.

Overview

The word *bank* comes from the Italian word for bench, *banca*. Italian moneychangers originally conducted their business on benches. Banking spread from Italy to England, where London goldsmiths offered people "safekeeping" for their gold, or commodity money. When people needed to make purchases, they would visit the goldsmith to withdraw some money. Deposits by some people tended to offset withdrawals by others, so the amount of money in the goldsmith's vault remained relatively constant over time. Goldsmiths found they could earn interest by lending some of these idle deposits. Today's banks still earn a profit by lending some of the money deposited with them.

Key Terms

check

fractional reserve banking system

representative money

fiat money

Federal Reserve System (the Fed)

discount rate

Federal Open Market Committee (FOMC)

open-market operations

In the News

Supernotes, Superfakes

About half of the $745 billion in U.S. currency circulates overseas. It is the currency of choice in most of the world. The $100 dollar bill is the most popular, with $537 billion in circulation. This makes the $100 bill a popular target for counterfeiters. Government estimates that about $700 million in U.S. counterfeit money is circulating around the world. Most of this is printed overseas. These fake notes undermine the integrity of all U.S. currency. The difficulty in distinguishing between what is real and what is counterfeit renders all U.S. currency abroad suspect. Among the best counterfeits are the "supernotes" coming mostly from North Korea. The North Korean government denies that it is involved in counterfeiting. However, in 1989 the North Korean government purchased a $10 million printing press of the same type that governments around the world use for printing currency. Federal Reserve and U.S. Treasury officials believe the North Koreans print $15 to $20 million in fake $100 bills each year. The bills have shown up around the world, and some even make it into the United States. Through 19 different variations, the North Koreans have improved the "supernotes" to where they have the look and feel of genuine bills.

THINK ABOUT IT

What is the difference between an individual counterfeiting and counterfeiting by a nation?

Sources: Bill Gertz, "North Korea Charges in Counterfeiting of U.S. Currency," *Washington Times*, December 2, 2005; "Trade Fact of the Week: The U.S. 'C-Note' Is the Favorite Target of Counterfeiters Worldwide," *Trade & Global Markets Project*, January 25, 2006.

The Earliest Banks

Keeping money, such as gold coins, on deposit with a goldsmith was safer than carrying it around or leaving it at home, where it could be easily stolen. Still, visiting the goldsmith every time one needed money was a nuisance. For example, a farmer might visit the goldsmith to withdraw enough gold to buy a horse. The farmer would then pay the horse trader, who would promptly deposit the receipts with the goldsmith. Thus, money made a round trip from goldsmith to farmer to horse trader, back to goldsmith.

Bank Checks

Depositors eventually grew tired of visiting the goldsmith every time they needed cash. They began writing notes instructing the goldsmith to pay someone, such as the horse trader, a certain amount from the depositor's account. This payment amounted to moving gold from one stack (the farmer's) to another (the horse trader's). These written instructions to the goldsmith were the first bank checks. A **check** is a written order for the bank to pay money from amounts deposited.

Checks have since become official-looking instruction forms. However, they need not be, as evidenced by the actions of a Montana man who paid his speeding fine by writing payment instructions on a clean but frayed pair of underpants. The Western Federal Savings and Loan of Missoula cashed the check.

Bank Loans

By combining the ideas of cash loans and checks, the goldsmith soon discovered how to make loans by check. Rather than lend idle cash, the goldsmith could simply create a checking account for the borrower. *The goldsmith could extend a loan by creating an account against which the borrower could write checks. In this way goldsmiths, or banks, were able to create a medium of exchange to "create money."* This money, based only on an entry in the bank's ledger, was accepted because of the public's confidence that the bank would honor these checks.

The total claims against the bank consisted of claims by people who had deposited their gold plus claims by people for whom the bank had created deposits. So both groups were depositors. Because the claims by those with deposits at the bank exceeded the value of gold on reserve, this was the beginning of a **fractional reserve banking system**. In this system, the goldsmith's reserves amounted to just a fraction of the claims by depositors.

The *reserve ratio* measures bank reserves as a share of deposits. For example, if the goldsmith had gold reserves valued at $40,000 but deposits totaling $100,000, the reserve ratio would be 40 percent.

fractional reserve banking system
Only a portion of bank deposits is backed by reserves

Bank Notes

Another way early banks could create money was by issuing bank notes. *Bank notes* were pieces of paper promising the bearer a specific amount of gold or silver when the notes were redeemed at the issuing bank. In London, goldsmiths introduced bank notes about the same time they introduced checks. *Checks could be redeemed for gold only if endorsed by the payee. Bank notes, however, could be redeemed for gold by anyone who presented them to the issuing bank.*

A bank note was "as good as gold," because the bearer could redeem it for gold. In fact, this paper money was more convenient than gold because it was more portable. Bank notes that exchanged for a specific commodity, such as gold, were called **representative money**. The paper money *represented* gold in the bank's vault. Initially, these promises to pay were issued by banks. Over time, governments took a larger role in printing and circulating bank notes.

check
A written order instructing the bank to pay someone from an amount deposited

representative money
Bank notes that exchange for a specific commodity, such as gold

Fiat Money

Once representative money became widely accepted, governments began issuing **fiat money** (pronounced "fee′at"). Fiat money is not of value in itself and is not convertible into gold, silver, or anything else of value. Fiat money is money

fiat money
Money of no value in itself and not convertible into gold, silver, or anything else of value; declared money by government decree

because the government says it is. People came to accept fiat money because they believed that others would accept it as well. You can think of fiat money as mere paper money. The currency issued by the U.S government and nearly all other governments throughout world today is fiat money.

A well-regulated system of fiat money is more efficient than commodity money or even representative money. Fiat money requires only some paper and a printing press. (U.S. notes, such as $100 bills, cost about 5 cents each to print). Commodity money and even representative money tie up more valuable resources, such as gold.

✓ CHECKPOINT

How did the earliest banks make loans?

Depository Institutions

Banks evolved from London goldsmiths into a wide variety of institutions that respond to the economy's demand for financial services. *Depository institutions* accept deposits from the public and make loans from these deposits. These institutions, modern-day versions of the London goldsmith, are classified broadly into commercial banks and thrift institutions.

Commercial Banks

Commercial banks are the oldest, largest, and most diversified of depository institutions. They are called *commercial banks* because historically they lent primarily to *commercial* ventures, or businesses, rather than to households. There are about 7,500 commercial banks in the United States, holding more than two-thirds of all bank deposits. Until 1980, commercial banks were the only depository institutions that offered demand de-

Main Idea

Role of Economic Institutions

Banks evolved from London goldsmiths into a wide variety of institutions that help individuals and groups accomplish their financial goals. **What are the two broad classifications of depository institutions?**



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e-conomics

AN OCTOPUS WITH MANY TENTACLES

Pay for your Big Mac with an octopus? No problem if you own the Octopus smart card. The Octopus card is a reloadable stored-value plastic card originally used to pay fares in the Hong Kong mass-transit system. Carrying a maximum of HK$1,000 (or about US$130), the card is ideal for numerous small purchases, especially those that would require you to carry around loose change and too many small bills. The card can be read by special readers through layers of clothing, wallets, or purses. In less than a second, the card is read and the holder sees the amount deducted and the remaining card balance. It can be recharged at any participating retailer or through special add-value machines that accept ATM cards. When introduced in 1997, the card was perfect for keeping up with the frantic pace of the mass-transit system. Then commercial enterprises asked to join in. Now everything from Starbucks to 7-Elevens, vending machines, parking meters, and pay phones accept the Octopus. No personal information of any kind is kept on the card. If lost or stolen, only the value remaining on the card is at risk. As of mid 2006, about 13 million cards in circulation were funding about 10 million transactions a day. Use of the card is spreading to Macau and Shenzhen in China, and, through a separate contract, to the Netherlands.

THINK CRITICALLY

What type of applications especially lend themselves to the use of the Octopus? What are the attributes that make these applications worthwhile?

Sources: "Award Winner Octopus Extends Its Reach," *South China Morning Post*, February 28, 2006; "Octopus Card," Wikipedia, 2006.

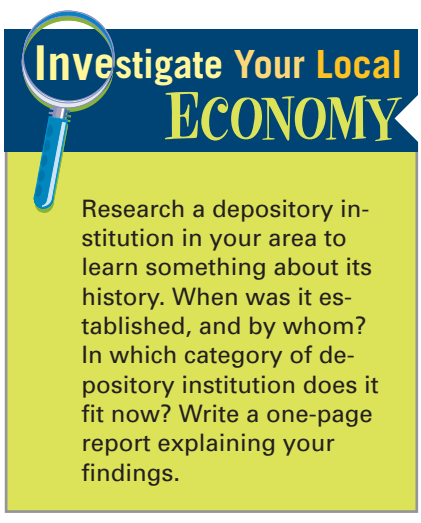
posits, or checking accounts. *Demand deposits* are so named because a depositor with such an account can write a check *demanding* those deposits.

Thrifts

Thrift institutions, or *thrifts,* include savings and loan associations, mutual savings banks, and credit unions. Historically, savings and loan associations and mutual savings banks specialized in making home mortgage loans. Credit unions, which tend to be small, account for most thrifts. They extend loans only to their "members" to finance homes or other major consumer purchases, such as new cars.

Dual Banking System

Before 1863, commercial banks in the United States were chartered, or authorized, by the states in which they operated, so they were called *state banks.* These banks, like the English goldsmiths, issued bank notes. Thousands of different notes circulated at the same time, and nearly all were redeemable for gold.



The National Banking Act of 1863 and its later amendments created a new system of federally chartered banks called *national banks*. Only national banks were authorized to issue notes and were regulated by the Office of the Comptroller of the Currency, part of the U.S. Treasury. The state banks survived by substituting checks for notes. To this day, the United States has a *dual banking system* consisting of both state banks and national banks.

✓ CHECKPOINT

Based on whom they lend to, what are the two types of depository institutions?

The Federal Reserve System

During the nineteenth century, the economy experienced a number of panic "runs" on banks by depositors seeking to withdraw their funds. A panic was usually set off by the failure of a prominent bank. As depositors became alarmed, they tried to withdraw their money. But they couldn't because each bank held only a fraction of its deposits as reserves, using the rest to earn interest, as in making loans.

Birth of the Federal Reserve System

The failure of a large New York City bank set off the Panic of 1907. During this banking calamity, thousands of depositors lost their savings and many businesses failed. The situation so aroused public wrath that Congress began developing what would become the **Federal Reserve System**, or **the Fed** for short. The Fed was established in 1913 as the central bank and monetary authority of the United States.

Federal Reserve System (the Fed)
Established in 1913 as the central bank and monetary authority of the United States

By that time nearly all industrialized countries had established central banks, such as the Bundesbank in Germany, the Bank of Japan, and the Bank of England. The American public's suspicion of monopolies initially led to the establishment of 12 separate banks, one in each of the 12 Federal Reserve districts around the country. The banks were named after the cities in which they were located—the Federal Reserve Banks of Boston, New York, Chicago, San Francisco, and so on, as shown in Figure 16.1. Later legislation passed during the Great Depression left the 12 Reserve Banks in place but centralized the power of the Federal Reserve System with a Board of Governors in Washington.

All national banks became members of the Federal Reserve System and were thus subject to new regulations. For state banks, membership was voluntary. Most state banks did not join the Federal Reserve System because they did not want to face tighter regulations.

Powers of the Federal Reserve System

The founding legislation directed the Federal Reserve Board of Governors "to exercise general supervision" over the Federal Reserve System to ensure sufficient money and credit in the banking system. The power to issue bank notes was taken away from national banks and turned over to the Federal Reserve Banks. (Take a look at paper currency and you will read "FEDERAL RESERVE NOTE" across the top.) These notes actually are printed by the U.S. Bureau of Printing and Engraving, which is part of the U.S. Treasury. The Treasury prints the notes, but the Fed has responsibility for putting them into circulation.

Federal Reserve Banks do not deal with the public directly. Each may be thought of as a bankers' bank. Reserve Banks hold deposits for member banks, just as commercial banks and thrifts hold deposits for the public. The name "Reserve Bank" comes from the responsibility to hold member-bank reserves on deposit.

Reserves consist of cash that banks have on hand in their vaults or on deposit with Reserve Banks. By holding reserves of member banks, a Reserve Bank can clear a check written by a depositor at one bank, such as Citibank, and deposited in another bank, such as your bank. This check-clearance process

is, on a larger scale, much like the goldsmith's moving gold from the farmer's pile to the horse trader's pile.

Reserve Banks also extend loans to member banks. The interest rate charged for these loans is called the **discount rate**. By making loans to banks, the Fed can increase reserves in the banking system.

Directing Monetary Policy

The Federal Reserve's Board of Governors is responsible for setting and carrying out the nation's monetary policy. *Monetary policy,* as you will recall, is the regulation of the economy's money supply and interest rates to promote macroeconomic objectives such as full employment, price stability, and economic growth.

The Board of Governors consists of seven members appointed by the president and confirmed by the Senate. Each serves one 14-year nonrenewable term, with one governor appointed every two years. One member is also appointed to chair the Board of Governors for a four-year renewable term. Board members tend to be economists. In 2006 all but one of the governors have degrees in economics, including Chairman Ben Bernanke.

NET Bookmark

For an online introduction to the Federal Reserve System, access the New York Federal Reserve Bank web site through thomsonedu.com/school/econxtra. This site provides an overview of the Fed's structure and operations. Click on "What We Do" and "Introduction," and read the article. What three activities set the New York Federal Reserve Bank apart from the other district banks in the system?

thomsonedu.com/school/econxtra

Board membership is relatively stable because a new U.S. president can be sure of appointing or reappointing only two members in a presidential term. *The Board structure is designed to insulate members from pressure by elected officials.*

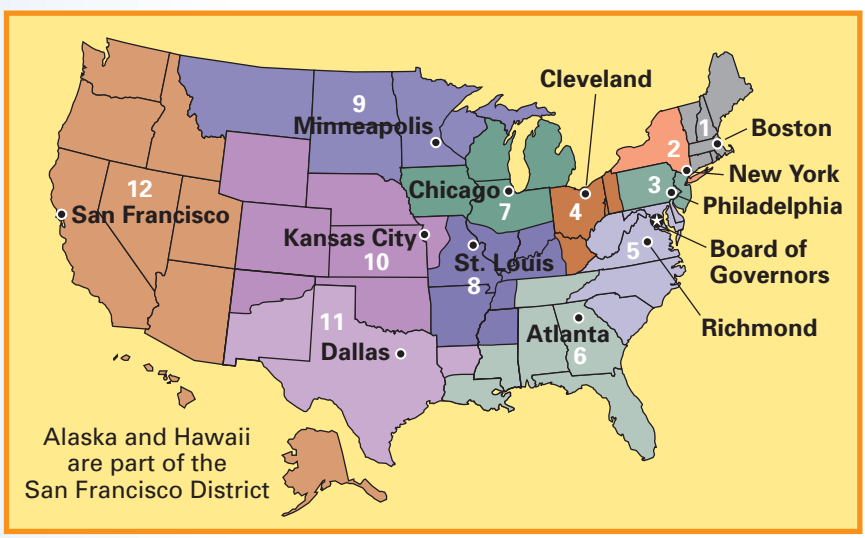
discount rate
Interest rate the Fed charges banks that borrow reserves

Federal Open Market Committee

Originally, the power of the Federal Reserve System was vested in each of the 12 Reserve Banks. Later reforms established the **Federal Open Market Committee (FOMC)** to consolidate decisions

Federal Open Market Committee (FOMC)
Twelve-member group that makes decisions about open-market operations

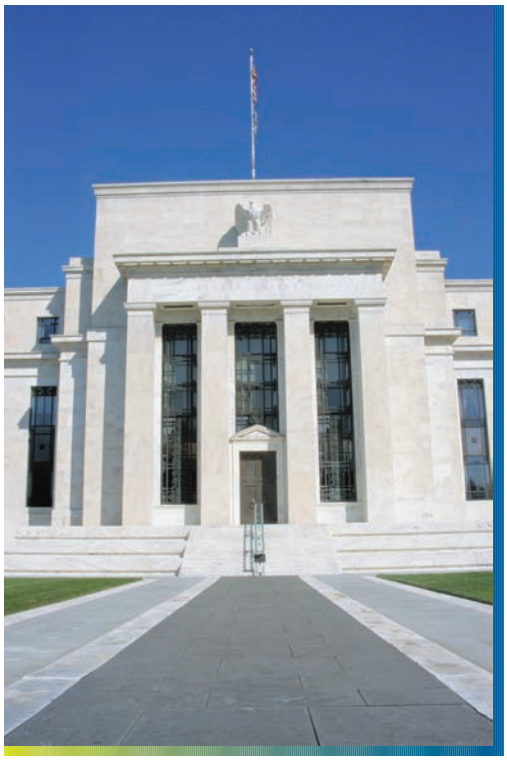
The Twelve Federal Reserve Districts — **Figure 16.1**



The twelve Federal Reserve districts are named after the cities in which they are located. Which district are you in?

Source: Federal Reserve Board.

open-market operations
Buying or selling U.S. government securities as a way of regulating the money supply and interest rates



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The FOMC is required to meet at least four times each year in Washington, D.C. What tool of monetary policy is this group responsible for implementing?

regarding the most important tool of monetary policy—open-market operations. **Open-market operations** consist of buying or selling U.S. government securities to influence the money supply and interest rates in the economy.

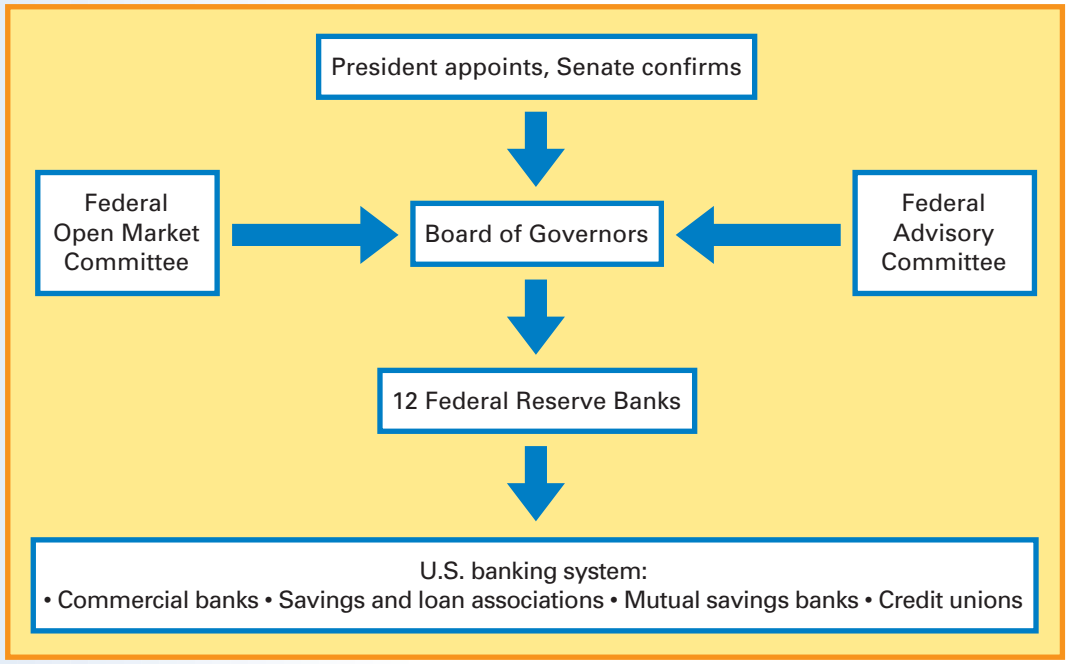
The FOMC consists of the 7 governors plus 5 of the 12 presidents of the Reserve Banks. The chair of the Board of Governors heads the FOMC. The organizational structure of the Federal Reserve System as it now stands is presented in Figure 16.2. The FOMC and, less significantly, the Federal Advisory Committee advise the Board of Governors. The Federal Advisory Committee consists of one commercial banker from each of the 12 Reserve Bank districts.

✓ CHECKPOINT

When and why was the Federal Reserve System created?

Organization Chart for the Federal Reserve System **Figure 16.2**

The Federal Reserve's Board of Governors is responsible for setting and carrying out the nation's monetary policy.



Assessment 16.2

Key Concepts

Xtra! Study tools
thomsonedu.com/school/econxtra

1. How would you feel about taking $10,000 in cash to an automobile dealership to purchase a used car? Why might you prefer to complete this type of transaction with a bank check instead?
2. Why are banks able to keep only 10 percent of checking deposits on reserve and still be reasonably sure that they will be able to pay all checks presented for payment?
3. Why are you willing to accept Federal Reserve notes (fiat money) in payment for your labor? Remember, these notes are backed by nothing other than the government's statement that they are money.
4. Why is it important to the economy that people who save and deposit money in banks can be sure that they will be able to withdraw their savings anytime in the future without suffering a loss?
5. How may banks obtain extra cash on short notice if an urgent need arises?

Graphing Exercise

6. Although there were nearly 8,000 commercial banks in the United States in 2004, most of these banks were relatively small. Most of the business in the banking industry was dominated by a few large banks. Use data in the table to construct a double bar graph that shows the number of commercial banks of different sizes and the amount of assets held by each group in 2004. Do you think the smaller banks could compete successfully with the larger banks? Why might some of these banks merge in the future?

Commercial Banks by Asset Size, 2004

Asset Size of Banks	Number of Banks in Group	Total Assets for Group in Billions of Dollars
Less $100 million	3,655	$ 189
$100 million to $1 billion	3,530	$ 954
$1 billion to $10 billion	360	$ 973
Greater than $10 billion	85	$6,297

Source: *Statistical Abstract of the United States*, 2006, p. 763.

Think Critically

7. **Government** Investigate the Banking Act of 1935 to find out how the creation of the Board of Governors changed the nature of the Federal Reserve System. Why do you think the government was willing to concentrate so much economic power in the hands of only seven people?

CONNECT TO HISTORY



Early Banking in the United States

In 1791, when Alexander Hamilton approved a 20-year charter for the First Bank of the United States, there were only three commercial banks in the country. The First Bank was 20 percent owned by the government. It immediately functioned as a central bank with a stabilizing influence on the nation's economy, especially in controlling the over-issuance of private bank notes. Still, many distrusted such a large institution. In 1811, its charter failed to get renewed by only one vote. The lapse was short lived, as the War of 1812 demonstrated to many in government the need for a strong central bank. In 1816, the Second Bank of the United States, chartered under the same basic rules, was formed.

The Second Bank of the United States also was unpopular in some parts of the country. For many, the bank seemed to serve the wealthy Eastern establishment at the expense of the Southern and Western parts of the country. When Andrew Jackson became president in 1829, he brought a dislike of banks in general and the Second Bank of the United States in particular. Rather than wait for the Bank's charter to expire in 1836, supporters of the bank pushed for renewal in 1832. Renewal passed Congress, but Jackson vetoed the bill. Wanting to "kill the monster" (the bank), he ordered the government to begin depositing its funds into various state-chartered banks, or "pet banks." The Second Bank of the United States, devoid of government deposits, limped along until 1849, when it finally went out of business.

Without the restraint imposed by a central bank, banks began to issue too much currency, and so the value of each piece of currency fell. By 1836, Jackson had become alarmed that people who owed the government money were repaying in currency of declining value. He ordered the Specie Circular, which stated that debts owed to the government could be paid only in hard currency—that is, in gold or silver coins. The result was a contraction of the money supply and the "Panic of 1837."

Nationally, Jackson's actions marked the beginning of what is called the "free banking era." Hundreds of state-chartered banks sprang up around the country. Many of these banks were established in such out-of-the-way places that they were called "wildcat banks." Each loosely controlled bank issued its own currency, thus flooding the nation with more than 9,000 denominations and types. People had no way of telling if a particular currency was sound or not. They resorted to "note detectors," which rated the currency according to the soundness of the bank that issued it. Many merchants refused to accept currency coming from outside their state or region.

The banking and currency problems were left unaddressed until the Civil War forced the passage of the National Banking Act. It wasn't until 1913 that the country formed the Federal Reserve System.

THINK CRITICALLY

Even today, historians debate Jackson's actions. Based on your understanding of banks and banking, examine Jackson's opposition to the Second Bank of the United States and his support for "hard money." Were his concerns valid and his veto justified? Are the same concerns about central banking and currency relevant today? Why or why not?

16.3 Money, Near Money, and Credit Cards

Objectives

- Describe the narrow definition of money.
- Explain why distinctions among definitions of money have become less meaningful over time.

Overview

When you think of money, what probably comes to mind is currency—notes and coins. Notes and coins, however, are only part of the money supply. If you deposit this currency in a checking account or if a bank extends you a loan by creating a checking account deposit, the amount in that checking account also is money. Currency and checking accounts are money because each serves as a medium of exchange, a unit of account, and a store of value. Some other bank accounts also perform the store-of-value function and sometimes can be readily converted into cash. These bank accounts are viewed as money, based on a broader definition.

Key Terms

M1

checkable deposits

M2

In the News

Traveler's Checks Go Electronic

As of October 2003, American Express, the largest and most well-known issuer of traveler's checks, began issuing traveler's cards. The result of extensive focus-group research, the cards combine the safety of traveler's checks with the convenience of plastic. Unlike debit or credit cards, the new cards are not tied to an individual's bank or credit card account. Instead they are similar to a phone card; but in place of user minutes, the travel card is loaded with a prepaid amount of cash. It can then be reloaded from American Express locations around the world and can be used to get cash at ATMs or any location that accepts American Express. Currency you receive in a transaction overseas can be placed in a safe travel-card account and be accessible for later transactions without the risk of personally carrying the cash. In addition, and unlike regular credit or debit cards, the cards will be replaced in 24 hours if lost or stolen.

THINK ABOUT IT

With traveler's cards available, would you still want to carry traveler's checks on a trip overseas? Why or why not?

Source: American Banker-Bond Buyer, a division of Thomson, *CardLine*, October 3, 2003.

Narrow Definition of Money: M1

M1
The narrow definition of the money supply; consists of currency (including coins) held by the nonbanking public, checkable deposits, and traveler's checks

Money aggregates are various measures of the money supply. The narrow definition, called **M1**, consists of currency (including coins) held by the nonbanking public, checkable deposits, and traveler's checks. The money supply at any given time is a stock measure, just as is the amount of cash you have with you right now.

Currency in Circulation

Dollar bills and coins in circulation are part of the money supply as narrowly defined. Money in bank vaults or on deposit at the Fed is not in circulation as a medium of exchange and so is not counted in the money supply. Currency makes up about half of M1.

The paper currency circulating in the United States consists of Federal Reserve notes. These notes are issued by, and are liabilities of, the Federal Reserve System. Because Federal Reserve notes are redeemable for nothing other than more Federal Reserve notes, they are fiat money. The other component of currency is coins. Like paper money, a U.S. coin is token money because its value in exchange exceeds its value as a commodity.

U.S. Currency Abroad

More than half of all Federal Reserve notes, particularly $100 notes, are in foreign hands. Wealthy people around the world, especially in unstable countries or countries that have experienced high inflation, often hoard U.S. currency as insurance against hard times. Some countries, such as Panama, Ecuador, and El Salvador, even use U.S. dollars as their own currency, a process called dollarization.

It's actually a good deal for Americans to have U.S. currency held abroad. Think about it this way: A $100 note that costs only about 5 cents to print can be "sold" to foreigners for $100 worth of their goods and services. It's as if these foreigners were granting the United States

NET Bookmark

Visit the Currency & Coins web page on the U.S. Treasury Department web site through thomsonedu.com/school/econxtra. Click on one of the links to "Latest Press Releases." Write a paragraph about the currency-related news reported in the press release.

thomsonedu.com/school/econxtra

Span the Globe

The U.S. Dollar: A World Currency

Most Americans do not realize that more than half the U.S. dollars in circulation are held overseas. According to recent Federal Reserve figures, in January 2006 about $730 billion was in general circulation in private hands outside banks and other financial institutions. Between $400 billion and $435 billion of that $730 billion was in use overseas. By comparison, realize that the number of dollars held outside the United States alone is many times the total amount of Japanese yen in general circulation in and outside of Japan. It is approximately two-thirds the dollar amount of euros held both in and outside Europe.

THINK CRITICALLY

Why do you think the dollar is such a popular currency around the world? Do you think this helps the United States? Why or why not?

Sources: Board of Governors of the Federal Reserve System, Economic Research and Data, www.federalreserve.gov/; *Money Stock*, Bank of Japan, www.boj.or.jp/en/type/stat/boj_stat/ms/ms0601.htm; *Monetary Developments in the Euro Area,* European Central Bank, January 2006, www.ecb.int/press/pdf/md/md0601.pdf

essentially free goods or services as long as that currency remains abroad, usually for years. (The average life span of a $100 note in circulation is nine years.)

Counterfeiting

Improvements in copy machines, computers, and printers allow even amateurs to make passable counterfeits of U.S. currency. Of the fake notes found in the United States nearly half are produced with computers, copiers, and printers.

U.S. currency is being redesigned to make it harder to copy. You may have noticed the new $20 note issued in late 2003. The major difference is the subtle introduction of color, a feature hard to fake. A new $50 note was issued in 2004, and a new $10 note, in 2006.

The Fed and the Treasury have announced plans to redesign the currency every 7 to 10 years. Their idea is to stay one step ahead of counterfeiters.

Checkable Deposits

Currency, or cash, makes up a little more than half of M1, the money supply narrowly defined. Suppose you have some cash with you right now—notes and coins. If you deposit this cash in a checking account, you can then write checks directing your bank to pay someone from your account. **Checkable deposits**, or deposits against which checks can be written, are part of the narrow definition of money.

Checkable deposits also can be tapped with an ATM card, or debit card. Banks hold a variety of checkable deposits. About half of checkable deposits are *demand deposits*. These are held mostly at commercial banks and earn no interest. In recent years, banks have developed other types of checking accounts, such as negotiable order of withdrawal, or NOW, accounts, which carry check-writing privileges but also earn interest. Checkable deposits of all types make up nearly half of M1.

checkable deposits

Deposits in financial institutions against which checks can be written and ATM, or debit, cards can be applied

Traveler's Checks

If you ever planned a vacation, you may have visited the bank to buy traveler's checks. You signed the checks at the bank, and then signed them again when you spent them. This allowed a merchant



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Using an ATM is a convenient way to access your checking account. Can you think of any disadvantages of using ATMs?

to compare your two signatures as the rightful owner of these checks.

If your cash is stolen, you are out of luck. However, if your traveler's checks are stolen, you can get them replaced. Therefore, traveler's checks are safer than cash. Traveler's checks are a tiny part of the money supply, accounting for only about 1 percent of M1.

✓ CHECKPOINT

What is the narrow definition of money?

Broader Definition of Money: M2

M1 serves as a medium of exchange, a unit of account, and a store of value. Some other bank accounts can be converted readily into M1. Recall that M1 consists of cash held by the nonbanking public, checkable deposits, and traveler's checks. **M2** includes M1 as well as savings deposits, small-denomination time deposits, and money market mutual fund accounts owned by households. Because these other accounts are so close to M1, they are considered to be money, using M2 as a broader definition. Here are details of those bank accounts included in M2.

M2

A broader definition of the money supply, consisting of M1 plus savings deposits, small-denomination time deposits, and money market mutual fund accounts owned by households

Savings Deposits

Savings deposits earn interest but have no specific maturity date. This means that you can withdraw them any time without a penalty. Banks often allow depositors to shift funds from savings accounts to checking accounts by using a phone, an ATM, or online banking. Because savings can be converted so easily into checkable deposits and cash, distinctions between narrow and broad definitions of money have become blurred. Still, saving deposits are not counted as part of the money supply when narrowly defined. Savings deposits alone total more than twice the size of M1.

Time Deposits

Time deposits earn a fixed rate of interest if held for a specified period. The holding period ranges from several months to several years. Holders of time deposits are issued certificates of deposit, or CDs for short. Early withdrawals are penalized by forfeiture of several months' interest. Neither savings deposits nor time deposits serve directly as media of exchange, so they are not included in M1, the narrow definition of money.

Time deposits of less than $100,000 are called small-denomination time deposits and are included in M2.

Money Market Mutual Fund Accounts

Money market mutual fund accounts are another component of the money supply more broadly defined as M2. Funds deposited in these accounts are used to purchase a collection of short-term interest-earning assets by the financial institution that administers the fund. Depositors are then able to write checks against the value of their deposited funds. Because of restrictions on the minimum balance, on the number of checks that can be written per month, or on the minimum amount of each check, these popular accounts are not viewed as part of M1, but are part of M2. Only retail money market accounts, or those held by households, are counted as part of M2. Accounts held by businesses and governments are not part of M2.

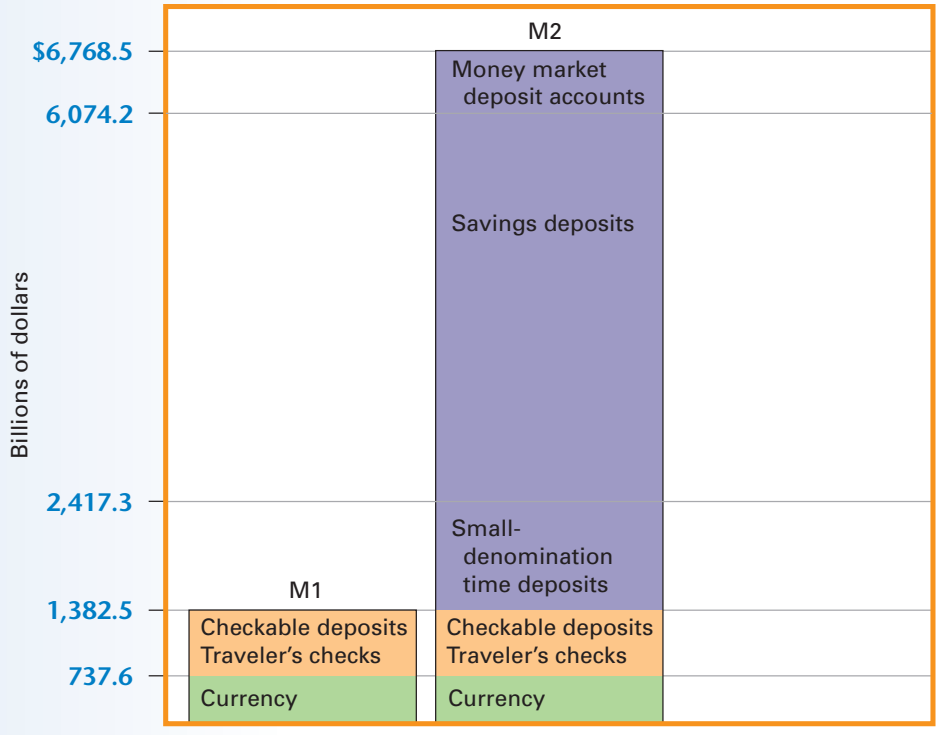
The size and the relative importance of each definition of money are presented in Figure 16.3. As you can see, M2 is nearly five times larger than M1. Again, distinctions between M1 and M2 become less meaningful as banks make it easier for depositors to transfer funds from one account to another.

Debit Cards but Not Credit Cards

Why do the definitions of money include funds accessible by debit (or ATM) cards but not include credit cards,

Alternative Measures of the Money Supply, April 2006

Figure 16.3



M2 is nearly five times larger than M1.

Source: Based on monthly estimates from the Federal Reserve Board.

such as VISA and MasterCard? After all, credit cards account for about 30 percent of all consumer spending in the United States. Most sellers accept credit cards as readily as they accept cash or checks. Online purchases and mail orders usually require credit cards.

A credit card itself is not money. Using a credit card, however, is a convenient way of obtaining a short-term loan from the card issuer. If you buy an airline ticket with a credit card, the card issuer lends you the money to pay for the ticket. You don't use money until you pay your credit card bill. The credit card has not eliminated your use of money. It has merely delayed it. On the other hand, when you use a debit card at a grocery store, a drugstore, or any number of other retailers, you draw down your checking account—part of M1.



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If a credit card itself is not money, what is it?

Electronic Money

Money has grown increasingly more abstract over time, moving from commodity money to paper money that represented a claim on some commodity such as gold, to paper money of no value in itself, to an electronic entry at a bank that can be tapped with a debit card. Much of modern money consists of electronic entries in bank computers. So, money has evolved from a physical commodity to an electronic entry. This evolution is depicted in Figure 16.4. Money today not so much changes hands as it changes computer accounts through electronic funds transfers.

✓ CHECKPOINT

Why have distinctions among the broad aggregates of money become less meaningful over time?

The Evolution of Money — **Figure 16.4**

Money has evolved from a physical commodity to an electronic entry.



1. Commodity Money



2. Representative Money



3. Fiat Money



4. Electronic Money

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Assessment 16.3

Key Concepts

Xtra! Study tools
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1. Why can't the Fed be sure of exactly how much currency is in circulation at any specific time? Why does it have a much better idea of the amount deposited in checkable accounts?
2. If you had $100, would you be more likely to spend it if you held it in cash, had it deposited in a checking account, or had a traveler's check in that amount? Are these forms of money all equally easy to spend?
3. How would buying a $50 shirt with a credit card be different from buying the same shirt with a debit card from your bank?
4. Before electronic fund transfers became common, it could take days or weeks for checks to be presented to banks for payment. During this time, banks could use funds deposited in checking accounts even though they had already been spent by the depositor. This time was called *float time.* What do you imagine has happened to float time in recent years? Do you think this has had an important impact on the economy? Why or why not?

Graphing Exercise

5. Use data in the table to construct two bar graphs to show the components of M1 and M2 in June 2006. Calculate the percent each component represented of the total for these two measures of the money supply. Do any of these percentages surprise you? Why or why not?

Components of M-1 and M-2 in June 2006
Values in billions of dollars

M1		M2	
Currency	$ 741.6	M1	$1,382.7
Traveler's Checks	$ 7.0	Savings Deposits	$3,622.5
Checkable Deposits	$ 634.1	Small Time Deposits	$1,058.0
		Money Market Funds	$ 727.9
Total	$1,382.7	Total	$6,791.1

Source: Federal Reserve web site, July 6, 2006.

Think Critically

6. **Mathematics** Calculate the changes in M1 and M2 that would result from each of the following. Explain how you found your answers. Why don't the values of M1 and M2 always change when the value of their components change?
   a. The Fed buys a $10,000 bond from a person who then deposits the funds in her checking account.
   b. A depositor has $500 transferred from his checking account to his savings account.
   c. A depositor withdraws $1,000 from her savings account in cash.
   d. A depositor transfers $2,000 from her savings account to a time deposit.

movers + shakers

Arthur A. Garcia *Director, Community Development Financial Institutions (CDFI), U.S. Department of the Treasury*

For Americans living in economically distressed communities, achieving their dreams can seem impossible. As director of the U.S. Treasury's Community Development Financial Institutions (CDFI) Fund, Arthur A. Garcia works to instill hope among people in these communities. The purpose of the Fund, and Garcia's overall role, is to expand the availability of credit, investment capital, and financial services in distressed communities. The end result is economic revitalization and community development.

A graduate of New Mexico State University with a Bachelor of Arts degree in government, Garcia earned a Masters degree in Finance and a Masters of Business Administration from Webster University. He was named outstanding graduate student at Webster. For years he worked in banking, as a district manager at one of New Mexico's largest and most respected credit unions, and as vice president of retail banking at First State Bank in New Mexico. He taught at the College of Santa Fe, Webster University, and the University of Phoenix. He has served as president of the Hispanic Bankers Association and on the Board of Directors of the School of Banking at the University of New Mexico.



CHRIS KLEPONIS/BLOOMBERG NEWS/LANDOV

In government, Garcia previously served as the Administrator of the Rural Housing Service at the U.S. Department of Agriculture. In his current position, to which he was appointed in 2004, he helps establish community organizations to revitalize disadvantaged areas and provide economic opportunities for low-income people. They have easier collateral and credit requirements than banks and make capital funds available in amounts as small as $1,000.

One CDFI, for example, lends to trucking and construction companies, video stores, hair salons, tire repair shops, a cattle ranch, a bed and breakfast, and a grocery store. Eighty-five percent of borrowers never had a checking or savings account, 75 percent never received a loan, and 95 percent had never been in business. All are working towards their dream with the help of a CDFI.

A Detroit CDFI helped a family practitioner renovate her medical clinic, which serves low-income residents. Her $115,000 loan was not available through conventional banks. The CDFI also provided marketing assistance to help her build her practice.

Stories of hope like these fuel Garcia's passion for serving as director of the CDFI Fund. In just one year, CDFIs used $67.5 million in Financial Assistance disbursements to leverage $1.8 billion private and non-CDFI dollars. They also opened more than 10,000 accounts for people who had no relationship with a financial institution. They financed the construction or rehabbing of nearly 19,000 housing units, and financed businesses that created or retained more than 12,000 full-time equivalent jobs.

SOURCE READING

In one year, CDFIs opened more than 10,000 accounts for people who did not to that point have a relationship with a financial institution. How does this promote economic revitalization and community development?

ENTREPRENEURS IN ACTION

In small groups, research the CDFI to find out if a small business owner could become eligible to receive one of these loans. Access the CDFI web site through thomsonedu.com/school/econxtra for information to use in completing this assignment.

Sources: www.cdfifund.gov; www.occ.treas.gov/ Cdd/Meeks.txt; www.womensenews.org/article.cfm/dyn/aid/2318

Sharpen Your Skills



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Decision-Making Skills

Banks use part of the money they receive from deposits in checking, savings, money market funds, and certificates of deposit (CDs) to make loans to their customers. The interest rate banks are willing to pay depositors depends on the type of account in which deposits are made. In general, the longer a bank expects to have a deposit, the higher the interest rate it pays. The reason for this relationship is the interest income banks are able to earn from loans they make. With a few exceptions, banks earn higher rates of interest from long-term loans than from short-term loans. This is why they are willing to pay more for long-term deposits. By carefully evaluating their situations, savers can make optimal decisions when they deposit their funds in banks.

The table below lists average interest rates paid for different types of deposits on July 6, 2006. Study this table, and use the information it contains to answer the questions that follow.

Interest Paid on Deposits, July 6, 2006

Type of Deposit	Interest Rate Paid
Small Checking Accounts	0.0%
Savings Accounts	3.7%
Money Market Deposits	4.4%
1-Year CD ($500 minimum deposit)	5.4%
3-Year CD ($1,000 minimum deposit)	5.5%
5-Year CD ($1,000 minimum deposit)	5.7%
Source: www.bankrate.com, July 6, 2006.	

Apply Your Skill

In which type of account would you choose to deposit your funds in each of the following situations? Explain each of your choices.

1. You have $250 in cash that you must spend to pay your rent next Friday.
2. You have $1,000 in cash that you intend to spend sometime in the next few months when a new racing bicycle you have ordered arrives at a bike shop. You do not know precisely when it will arrive.
3. You have decided to start to save by setting aside $20 from each of your weekly paychecks.
4. You were given $2,000 by your uncle, who told you to set it aside for your college tuition after you graduate from high school in two years.
5. You inherit $10,000 and decide to set it aside to help you make a down payment on a house after you graduate from college and get settled in a career.

16 Chapter Assessment

Summary

16.1 Origins of Money

a The earliest families were self-sufficient and did not need money. When people began to specialize, transactions were carried out through barter at first. Problems with using barter centered on the difficulty of finding mutually beneficial trades of products with equal values. Making these exchanges involved large transaction costs that gave birth to money. People began to accept goods that they did not expect to use themselves but rather to trade later for other products they wanted. The goods that were used as money became known as *commodity money.*

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b Money must fulfill three functions. (1) It must be accepted as a *medium of exchange.* (2) It must serve as a unit of account. (3) It must provide a store of value over time. An ideal form of money would be durable, portable, divisible, of uniform quality, have a low opportunity cost of use, have a supply and demand that does not fluctuate wildly, and exist in limited quantity.

c Coins replaced other types of commodity money in early commerce. They were more portable, durable, and divisible than most types of commodity money. To assure that the precious metals they contained were pure, coins were stamped with an official seal by the issuing institution. Gradually, most coins minted were token money, which means that the value stamped on them was greater than the value of the gold or silver they contained.

16.2 Origins of Banking and the Federal Reserve System

a The earliest businesses that served as banks were goldsmiths who stored gold for their customers. Depositors often wrote checks to have gold transferred from one account to another. Goldsmiths learned that they could lend part of these funds on deposit to earn interest. Goldsmiths came to operate under the *fractional reserve banking system.*

b Paper money was first issued in the form of notes printed by banks. These notes could be redeemed at the issuing bank for gold. Soon, governments also issued paper money that often was backed by nothing other than the government's statement that it was money. This *fiat money* is accepted because people trust the government and expect others to accept the money as well.

c Depository institutions are classified broadly into commercial banks, which hold more than two-thirds of bank deposits, and thrift institutions, which include mutual savings banks and credit unions. Banks may be chartered by either the state or the federal government in the United States.

d The *Federal Reserve System,* or *Fed,* was established in 1913 to stop runs on banks. The Fed is responsible for supervising banking in the United States and for making and implementing monetary policy. The Fed may lend money to banks at the *discount rate.*

16.3 Money, Near Money, and Credit Cards

a The Fed measures the money supply in the U.S. economy through two money aggregates. *M1* includes currency in circulation, checkable deposits, and traveler's checks. The measurement of M1 is complicated by U.S. currency that is held abroad, and by counterfeiting.

b *M2* is a broader definition of the money supply. It includes M1 plus savings and time deposits, as well as funds placed in money market mutual fund accounts. The distinction between M1 and M2 becomes less meaningful once depositors can easily transfer funds between M1 accounts and M2 accounts.

c Electronic fund transfers carried out through debit cards have made it easier for people to spend their money. When people use credit cards to purchase goods or services, they are effectively taking out short-term loans.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** Money not of value in itself and not convertible into gold, silver, or anything else of value

_____ **2.** Anything generally accepted by all parties in payment for goods or services

_____ **3.** Buying or selling U.S. government securities as a way of regulating the money supply

_____ **4.** Narrow definition of the money supply

_____ **5.** A written order instructing a bank to pay someone from the amount deposited

_____ **6.** Bank notes that exchange for a specific commodity, such as gold

_____ **7.** Interest rate the Fed charges to banks that borrow reserves

_____ **8.** Central bank and money authority of the United States

_____ **9.** Deposits in financial institutions against which checks can be written

_____ **10.** Anything that serves both as money and as a commodity, such as gold

a. check
b. checkable deposits
c. commodity money
d. discount rate
e. Federal Open Market Committee (FOMC)
f. Federal Reserve System
g. fiat money
h. fractional reserve banking system
i. M1
j. M2
k. medium of exchange
l. open-market operations
m. representative money

Review Economic Concepts

11. Without __?__ there is no need for money.

12. **True or False** The high transaction cost of money gave birth to barter.

13. Which of the following is not a function of money?

a. medium of exchange
b. unit of account
c. standard of deposit
d. store of value

14. Gold, silver, wheat, and tobacco have all served as __?__ at some time in the past.

15. **True or False** *Fiat money* is accepted when people trust the issuing agency.

16. Which of the following is probably the greatest limitation on the usefulness of diamonds as *commodity money*?

a. They are not durable.
b. They are not portable.
c. They do not have value.
d. They are not easily divisable.

17. Paper documents issued by banks that promised the bearer a specific amount of gold or silver were called __?__.

18. Goats or sheep make poor money because they

a. are not portable.
b. are not divisible.
c. have no value.
d. exist in almost unlimited quantities.

19. **True or False** Money is a stock while income is a flow.

20. *Federal Reserve* notes are examples of

a. fiat money.
b. representative money.
c. commodity money.
d. full-bodied money.

21. **True or False** Banks in the United States may be chartered only by state governments.

22. In the past, savings and loans and mutual savings banks specialized in
    a. issuing credit cards.
    b. extending credit to businesses.
    c. maintaining checking accounts.
    d. making home mortgage loans.

23. When the Fed lends money to banks, it charges them the __?__.

24. Which of the following statements about the Federal Reserve's Board of Governors is not true?
    a. Its members are responsible for setting monetary policy.
    b. Its members are elected by commercial bank presidents.
    c. Its members also serve on the Federal Open Market Committee.
    d. Its members serve 14-year terms.

25. **True or False** The *FOMC* was established to coordinate the Fed's *open-market operations.*

26. *M1* includes each of the following except
    a. checkable deposits.
    b. currency.
    c. small savings account deposits.
    d. traveler's checks.

27. A part of a collection of short-term interest-earning assets that individuals are able to purchase is called a __?__.

28. **True or False** The use of a debit card will immediately impact the money supply while the use of a credit card will not.

29. __?__ carried out through debit cards make it easier for people to spend their money.

Apply Economic Concepts

30. **Decide When to Use Cash** Which of the following transactions would you complete with cash and for which would you write a check? Explain each of your choices. What generalizations can you make about when people choose to use cash to make their payments?
    - Pay your $850 rent.
    - Buy two $8 movie tickets for your friend and yourself.
    - Make a $199 monthly payment for your car loan.
    - Purchase your lunch for $5.99 at a fast-food restaurant.
    - Repay your uncle the $300 he loaned you last year.

31. **Assess What Makes a Piece of Paper Money** Some resort communities issue guests special pieces of paper that may be used to purchase goods or services within the resort. Guests may spend 50 credits to rent a small sailboat, 75 credits to purchase a meal, or 100 credits to play a round of golf or take a tennis lesson. In what ways are these pieces of paper similar to money and in what ways are they different from money?

32. **Calculate the Money Supply** The following table lists amounts of money held in a variety of forms in January 2006. Use these values to calculate the amount in M1 and M2 at that time.

Money Held in January 2006
Values in Billions of Dollars

Currency	$ 729.4
Checkable Deposits	$ 646.4
Savings Deposits	$3,528.1
Small Time Deposits	$ 829.0
Money Market Funds	$ 712.0
Traveler's Checks	$ 7.2

Source: Federal Reserve web site, www.federalreserve.gov, July 6, 2006.

33. **Describe What Happens When the Fed Lends Money** Banks that are short on cash may ask to borrow funds from the Federal Reserve System. This sometimes happens when banks located in rural areas need money to make loans to farmers in the spring when they are preparing to plant crops. These loans are repaid the following fall, after farmers have harvested and sold their crops. Write an essay that describes what would happen in the economy if a bank borrowed $10 million from the Fed and used this money to make loans to farmers.

34. **Identify Depository Institutions** Make a list of all the depository institutions that have offices in your community. Identify them as commercial banks, savings and loans, mutual savings banks, credit unions, or other. How much difference is there in the services that they offer typical consumers?

35. **Illustrate Limitations on Commodity Money** Construct a grid that has five columns and eight rows. List the seven qualities of ideal money in cells 2 through 8 of the first column and the four types of commodity money identified below in cells 2 through 5 of the first row. Write "yes" or "no" in each of the remaining cells, depending on whether the corresponding type of commodity possesses the indicated quality. Which of these types of commodity money would probably be most useful in completing transactions? Explain your answer.

Examples of Commodity Money			
Apples	Diamonds	Cotton	Chickens

36. **Sharpen Your Skills: Decision Making** Imagine that you have decided to save $5,000 over the next two years to make the down payment on a used car. You work 20 hours each week after school and take home $127.35 after taxes. You believe you could save $30 each week during the 42 weeks of the school year. In the summer, you plan to work 40 hours each week and take home about $250. During this time you could save more. Use this information to create a savings plan to reach your goal. Which of the following types of savings accounts would you open? How much could you save during each school year? How much would you need to save during each of two summers to reach your goal? Explain your plan in several paragraphs.

Possible Ways to Save

- a checking account that pays no interest
- a savings account that pays 2 percent interest
- a one-year certificate of deposit that pays 3.75 percent interest and has a minimum deposit of $500



37. Access **EconNews Online** at thomsonedu.com/school/econxtra. Find the article entitled "Making It Tough on Counterfeiters." Read the article, and then answer this question: Why do you think the government is changing the $10, $20, $50, and $100 bills, but not the $1 and $5 bills?

17 Money Creation, the Federal Reserve System, and Monetary Policy

17.1 How Banks Work

17.2 Monetary Policy in the Short Run

17.3 Monetary Policy in the Long Run



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CONSIDER

How does the Fed create money?

Why don't you demand all the money you can get your hands on?

What's the price of holding money?

How does the supply of money in the economy affect your chances of finding a job, your ability to finance a new car, and the interest rate you pay on credit cards?

What's the impact of changes in the money supply on the economy in the short run and in the long run?

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17.1 How Banks Work

Objectives

- Discuss what's involved in getting a new bank up and running.
- Describe how the banking system can expand the money supply by a multiple of excess reserves.

Overview

Coins and paper money notes account for only a part of the money supply in the U.S. economy. The narrow definition of money also includes checking accounts, which consist mostly of electronic entries in bank computers. The Federal Reserve System creates money not so much by circulating more Federal Reserve notes, but by having banks do what they do best—accept deposits and lend out some of them to borrowers. Bank reserves provide the raw material banks use to make loans, and these loans are how the banks add to the money supply.

Key Terms

net worth

asset

liability

balance sheet

required reserve ratio

required reserves

excess reserves

money multiplier

In the News

"Because That's Where the Money Is"

Almost from the moment the first banks opened for business, there were bank robbers. Popular fiction and films have portrayed them as daring outlaws able to steal huge sums in a single heist. Some real-life robbers such as Jesse James, John Dillinger, Willie Sutton, and Bonnie and Clyde became legends. When asked why he robbed banks, Willie Sutton famously responded, "because that's where the money is." Many Americans rooted for these outlaws because people saw banks as tools of the rich. Although bank robberies attract much media attention, losses to U.S. banks from robberies totaled only $70 million in a recent year. By way of comparison, losses from check fraud totaled about $12 billion, or 170 times that from bank robberies. What's more, three quarters of bank robbers get caught and convicted. Although usually better guarded than other banks, a few central banks around the world also have been robbed. For example, as the U.S. war in Iraq began, the sons of former dictator Saddam Hussein reportedly hauled away 900 million in U.S. dollar reserves from Iraq's central bank. The job required three tractor trailers. Most of the money was later recovered.

THINK ABOUT IT

Do you think the security of a nation's banks is important to the nation's political and economic stability? Why or why not?

Sources: "A Theory About Bank Robbery," www.bankersonline.com/articles/bhv13n04/bhv13n04a16. html; and "The Thief of Baghdad," May 6, 2003, CNN Transcript, http://transcripts.cnn.com/TRANSCRIPTS/0305/06/lt.03.html.

Operating a Bank

Suppose some business leaders in your community want to establish a bank. The following section discusses how they would get their new bank up and running. These considerations would apply to the operation of any depository institution, such as a commercial bank, a savings and loan, a mutual savings bank, or a credit union.

Getting a Charter

The bank founders first need to obtain a *charter,* or the right to operate. They would apply to the state banking authority to start up a state bank or to the U.S. Comptroller of the Currency to start up a national bank. In considering the application, the chartering agency would review the quality of management, the need for another bank in the community, the initial investment, and the likelihood of success.

The founders plan to invest $1,000,000 of their own money in the bank, and they indicate this on their charter application. Once a charter is granted, they incorporate, issuing themselves shares of stock, or certificates of ownership. Thus, they exchange $1,000,000 for shares of stock in a bank they name Home Bank. These shares are called the *owners' equity,* and represent the **net worth** of the bank.

The owners invest this $1,000,000 in building and furnishing the bank. These become the bank's assets. An **asset** is any physical property or financial claim that is owned. The bank is now ready for business.

liability
An amount owed

balance sheet
A financial statement showing assets, liabilities and net worth at a given time; assets must equal liabilities plus net worth, so the statement is in balance

net worth
Assets minus liabilities; also called owners' equity

asset
Any physical property or financial claim that is owned

required reserve ratio
A Fed regulation that dictates the minimum fraction of deposits each bank must keep in reserve

required reserves
The dollar amount that must be held in reserve; checkable deposits multiplied by the required reserve ratio



The process of obtaining a bank charter in South Carolina is described in its Code of Laws, Title 34 - Banking, Financial Institutions, and Money. Access this document through thomsonedu.com/school/econxtra. What six items must an application for a savings bank charter granted in South Carolina contain? (Hint: See Section 34-30-70, B, 1-6.)

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Bank Balance Sheet

Opening day is a lucky one for Home Bank because the first customer opens a checking account and deposits $100,000 in cash. The cash becomes the bank's asset. In accepting this deposit, the bank promises to repay the depositor that amount. That promise becomes the bank's **liability**, which is an amount that is owed.

As a result of this deposit, the bank's assets increase by $100,000 in cash and its liabilities increase by $100,000 in checkable deposits. At this point the money supply has not changed. The depositor simply converted $100,000 in cash to $100,000 in checkable deposits, which becomes part of the money supply. The bank's vault now holds the cash, which is no longer in circulation and so is no longer considered part of the money supply.

Look at the bank's **balance sheet**, presented in Figure 17.1. As the name implies, a balance sheet shows an equality, or a balance, between the two sides of the bank's account. The left side lists the bank's assets. At this stage, assets include the $1,000,000 in building and furnishings owned by Home Bank and the $100,000 in vault cash.

The right side shows two claims on the banks assets: claims by the owners, or net worth, amounting to $1,000,000, and claims by nonowners, or liabilities, which at this point consist of checkable deposits of $100,000. The two sides of the ledger must always be equal, or be in *balance,* which is why it's called a *balance sheet.* Assets must equal liabilities plus net worth.

Assets = Liabilities + Net Worth

Reserve Accounts

The Fed requires Home Bank to set aside, or to hold in reserve, a fraction of checkable deposits. The **required reserve ratio** dictates the minimum fraction of deposits the bank must keep in reserve. The dollar amount that must be held in reserve is called **required reserves**—checkable deposits multiplied by the required reserve ratio.

Home Bank's Balance Sheet After $100,000 Deposit in Checking Account — **Figure 17.1**

The two sides of a balance sheet are always equal, or "in balance." Assets equal liabilities plus net worth.

Assets		Liabilities and Net Worth	
Cash	$ 100,000	Checkable Deposits	$ 100,000
Building and Furniture	$ 1,000,000	Net Worth	$ 1,000,000
Total	$ 1,100,000	Total	$ 1,100,000

All banks and thrifts are subject to the Fed's reserve requirement. Reserves are either held as cash in the bank's vault or put on deposit at the Fed. In neither case are those reserves in circulation, so they are not counted as part of the money supply. Neither earns Home Bank any interest. If the required reserve ratio on checkable deposits is 0.1, as it has been in recent years, Home Bank must hold $10,000 as required reserves. That equals 0.1 times $100,000.

Home Bank's reserves now consist of $10,000 in required reserves and $90,000 in **excess reserves**, which are bank reserves that exceed required reserves.

So far Home Bank has not earned a dime. Excess reserves, however, can be used to acquire interest-earning assets. By law, a bank's interest-bearing assets are limited primarily to loans and to government securities. Suppose Home Bank uses the $90,000 excess reserves to make loans and buy government securities.

✓ CHECKPOINT

What needs to be done to get a new bank up and running?

Money Multiplier

Home Bank has used all its excess reserves to make loans and buy U.S. government securities, assets that will earn interest. The bank now has no excess reserves. What if, in addition to Home Bank having no excess reserves, there are no excess reserves in the entire banking system? In this setting, how can the Fed increase the money supply?

The Fed Makes a Move

To get the ball rolling, suppose the Fed buys a $10,000 U.S. government bond from Home Bank. This is called an open-market operation, and it's the primary way the Fed can alter the money supply. To pay for the bond, the Fed increases Home Bank's reserve account by $10,000. Where does the Fed get these reserves? It makes them up—creates them out of thin air, out of electronic ether!

In the process, Home Bank has exchanged one asset, a U.S. bond, for another asset, reserves held at the Fed. A U.S. bond is not money, nor are reserves, so the money supply has not yet changed. But Home Bank now has $10,000 in excess reserves, and excess reserves are the fuel for money creation.

excess reserves
Bank reserves in excess of required reserves

Round One

What will Home Bank do with those excess reserves? Suppose Megan comes in and applies for a $10,000 car loan. Home Bank approves her loan and increases her checking account by $10,000. Home Bank has converted her promise to repay, her IOU, into a $10,000 checkable deposit. *Because her newly created checkable deposit is money, this loan increases the money supply by $10,000.*

She writes a $10,000 check for the car, and the car dealer promptly deposits it in the company's checking account at Fidelity Bank. Fidelity Bank increases the car dealer's account by $10,000, and sends Megan's check to the Fed. The Fed transfers $10,000 in reserves from Home Bank's account to Fidelity Bank's account. The Fed then sends the check to Home Bank, which reduces Megan's checkable deposits by $10,000. The Fed has thus "cleared" her check by settling the claim that Fidelity Bank had on Home Bank.

At this point, the $10,000 in checkable deposits has simply shifted from Megan's account at Home Bank to the car dealer's account at Fidelity Bank. The increase in the money supply in this first round remains at $10,000.

money multiplier
The multiple by which the money supply can increase as a result of an increase in excess reserves in the banking system

Round Two and Beyond

Because the required reserve ratio is 0.1, Fidelity Bank sets aside $1,000 of the new deposit as reserves and lends the remaining $9,000 for a computer purchase by increasing the borrower's checking account. Thus, the money supply has increased by an additional $9,000, and the cumulative increase is $19,000 to this point.

An individual bank can lend no more than its excess reserves. When the borrower spends the amount loaned, reserves at one bank usually fall. However, total reserves in the banking system do not fall because the money spent usually gets deposited in the recipient's bank account, and can fuel more loans. The potential expansion of checkable deposits in the banking system equals some multiple of the initial increase in excess reserves.

This cycle of borrowing, spending, and depositing continues round after round. As a result of the Fed buying this $10,000 bond, the money supply could eventually increase by a multiple of the excess reserves created by the Fed. Because this money-creation process began with the Fed's open-market operation, the Fed can rightfully claim, "The buck starts here." This slogan appears on a large plaque in the Federal Reserve chairman's office.

Reserve Requirements and Money Expansion

The banking system as a whole eliminates excess reserves by expanding the money supply. With a required reserve ratio of 0.1, the Fed's initial injection of $10,000 in fresh reserves could support up to $100,000 in new checkable deposits.

The **money multiplier** is the maximum multiple by which the money supply increases as a result of an increase in the banking system's excess reserves. The money multiplier equals 1 divided by the required reserve ratio. If r stands for the required reserve ratio, then the money multiplier is $1/r$. In this example, the required reserve ratio is 0.1, so the money multiplier is 1/0.1, which equals 10. The formula for the multiple expansion of checkable deposits can be written as:

$$\text{Change in checkable deposits} = \text{Change in excess reserves} \times 1/r$$

The greater the fraction of deposits that must be held as reserves, the smaller the money multiplier. A required reserve ratio of 0.2 instead of 0.1 would mean each bank would have to set aside twice as much in required reserves. The money multiplier in this case would be 1/0.2, which equals 5. The maximum possible increase in checkable deposits resulting from an initial $10,000 increase in fresh reserves would be $10,000 × 5, or $50,000.

Excess reserves fuel the expansion of checkable deposits. A higher reserve requirement drains this fuel from the banking system, thereby reducing the amount of new money that can be created. The fractional reserve requirement is the key to the multiple expansion of checkable deposits. If each $1 deposit had to be backed by $1 in required reserves, the money multiplier would be cut to 1.

Contraction of the money supply works in the same way, but in reverse. It begins with the Fed *selling* a $10,000 U.S. bond to Home Bank. Therefore, the Fed increases the money supply by buying bonds and decreases it by selling bonds.

Limitations on the Multiplier

For a given required reserve ratio, the multiplier is greatest if

1. banks do not allow excess reserves to sit idle
2. borrowed funds do not sit idle in checking accounts but are spent
3. the public does not choose to hold some of the newly created money as cash.

If excess reserves remain idle or if borrowed funds sit around in checking accounts, they are less able to fuel an expansion of the money supply. If people stash away some of the newly created money as cash rather than spend it or leave it in checking accounts, then that portion of borrowed funds held as idle cash cannot provide additional reserves in the banking system.

For the money multiplier to operate, a particular bank need not use excess reserves just to make loans. It could just as well use them to pay all its employees a Christmas bonus. As long as that spending ends up as checkable deposits in the banking system, the money multiplier can operate.

✓ CHECKPOINT

How can the banking system expand the money supply by a multiple of excess reserves?

e-conomics

FROM BIG RIGS TO WALLY WORLD—SPECIALTY BANKS RISE AGAIN

An unexpected outgrowth of the rise of online banking has been the growth of "specialty banks" created to serve particular types of customers both online and off. Most of these banks target members of a specific group who would be likely to use convenient facilities or online banking services. For example, in 2000, National-Interbank formed a partnership with PNV Inc., a web site company aimed at truckers, to operate an online bank for truckers. Because truckers spend so much time on the road, traditional banking is not convenient for them. With the creation of this specialty bank, a trucker can now do his or her banking from the seat of a big rig. In some ways, this trend in specialty banks is a throwback to credit unions, which originally served only members of particular groups, usually particular professions. Ironically, in recent years, changes in banking laws have allowed many credit unions to expand their client base beyond the groups they originally were designed to serve. Specialty banks are reversing that trend. In early May 2006, Wal-Mart requested a bank charter to form what may be a huge specialty banking institution, one built around outlets in its more than 1,100 stores. Credit and debit cards, electronic check processing, and other financial services would be offered to Wal-Mart customers. Cost savings generated by eliminating outside financial institutions' transaction charges for using their cards would be passed on to Wal-Mart customers in the form of lower prices. Because of the probable impact on their profits, other financial institutions are fighting Wal-Mart's move.

THINK CRITICALLY

Do you think targeting a particular type of customer group would be effective? Why or why not? Would this strategy make more sense for online banking than it does for traditional depository institutions, even the one to be offered by Wal-Mart? Explain your answer.

Source: Benjamin Powell, "If Others Ok'd, Then Wal-Mart's Specialty Bank Application Should Be as Well," *Business First*, May 5, 2006.

Assessment 17.1

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Key Concepts

1. Why are people who organize a bank required to invest their own funds as owner's equity in the new business? How does this help to protect the bank's depositors?
2. Why is a loan made by the bank counted as an asset to the bank, while a deposit made by a customer is counted as a liability to the bank?
3. Bank ABC holds $100 million in deposits upon which it must maintain a required reserve ratio of 0.1. The bank currently has $12 million on reserve. How much excess reserves does the bank hold? Why would it want to invest or loan these reserves as quickly as possible?
4. Why doesn't the money multiplier work as effectively if people decide to hold additional funds they receive in cash?

Graphing Exercise

5. Construct a bar graph to show four rounds of the money-creation process that would result from a new deposit of $2,000 in a checking account when the required reserve ratio is 0.1.

Expansion of a New $2,000 Deposit

	New Deposit	Required Reserve	New Loan
Round 1	$2,000.00	$200.00	$1,800.00
Round 2	$1,800.00	$180.00	$1,620.00
Round 3	$1,620.00	$162.00	$1,458.00
Round 4	$1,458.00	$145.80	$1,312.20

Think Critically

6. **Math** Recalculate the table in exercise 5 above, assuming that the Fed increased the required reserve ratio from 0.1 to 0.12. Why is the required reserve ratio an important factor in determining the amount of money that banks are able to lend? What would happen to consumers' ability to borrow funds from banks if the required reserve ratio was increased?

17.2 Monetary Policy in the Short Run

Objectives

- Explain the shape of the money demand curve.
- Explain how changes in the money supply affect interest rates and real GDP in the short run.
- Discuss the federal funds rate and why the Fed uses this rate to pursue monetary policy goals.

Overview

So far the focus has been on how the banking system creates money. A more fundamental question is how the money supply affects the economy as a whole. When the Fed expands the money supply, this drives down interest rates in the short run. Because the cost of borrowing falls, firms borrow more to buy capital goods and households borrow more to buy cars, homes, and other "big ticket" items. Thus, an increase in the supply of money increases aggregate demand, output, and employment in the short run.

Key Terms

money demand

money supply

federal funds market

federal funds rate

In the News

The Federal Funds Rate

On June 29, 2006, the Federal Reserve increased the federal funds rate by one quarter of a percentage point for the seventeenth consecutive rate hike. The federal funds rate rose from 1 percent in June 2004 in a series of increases that reflected the Fed's tightening policy to head off inflation. Some observers saw 5.25 percent as a neutral interest rate, which balanced the interests of promoting economic growth with the need to control inflation. Controlling inflation has been of primary concern to the Federal Reserve since the late 1970s under chairman Paul A. Volcker. This approach continued during the 18-year term of Alan Greenspan, and is expected to continue to be the policy of the most recently appointed chairman, Ben Bernanke. With a rate about 2 percentage points above inflation, the federal funds rate would be near its historical norm. When the Fed began raising this rate in 2004, the rate of 1 percent was well below inflation. The general rule is that a rate increase needs about a year to a year and a half to have an impact. With the rate at 5.25 percent and with the economy showing signs of slowing, many expected the Federal Open Market Committee to pause its rate-raising policy, and it did pause at the next meeting. Such a breather in rate hikes allowed the committee time to assess the effects of its policy on the economy.

THINK ABOUT IT

Should the Federal Open Market Committee focus exclusively on curbing inflation or should it worry that too aggressive an approach to rate hikes could cause a recession?

Sources: Edmund L. Andrews, "Playing it by Ear," *New York Times*, April 28, 2006; Nell Henderson, "Fed Raises Rate Again, Now What? With 16th Straight Rise, Board Leaves Its Options Open," *Washington Post*, May 11, 2006.

Money Demand

Recall the distinction between a *stock* and a *flow*. A stock measures something at a point in time, such as the amount of money you have with you right now. A flow measures something over an interval of time, such as your income per week. It may seem odd to even talk about the demand for money. You might think people would demand all the money they could get their hands on. Remember, however, that *money,* the stock, is not the same as *income,* the flow. People express their demand for money by holding some of their wealth as money rather than holding other assets. People express their demand for income by selling their labor and other resources to earn income.

A Medium of Exchange

Why do people demand money? Why do people maintain checking accounts and have cash in their pockets, purses, wallets, desk drawers, lockers, and coffee cans? The reason is obvious. *People demand money to carry out market transactions.* Money is a convenient medium of exchange.

Your demand for money is based on your expected spending. If you plan to buy lunch tomorrow, you will carry enough money to pay for it. You may also have extra money on hand in case of an emergency or in case you come across something else you want to buy. You may have a little extra cash with you right now for who knows what. Even you don't know.

A Store of Value

The demand for money is related to money's role as a medium of exchange. However, money also is a store of value. People save for a new home, for college, for retirement. People can store their purchasing power as money or as other financial assets, such as corporate and government bonds. When people purchase bonds and other financial assets, they are lending their money and earning interest for doing so. The interest rate indicates the cost of borrowing and the reward for lending.

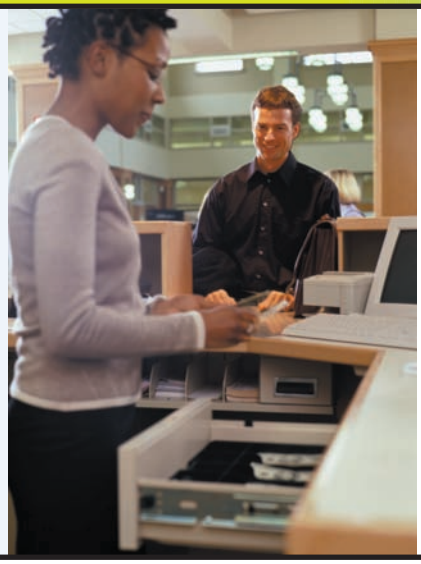
The Cost of Holding Money

The demand for any asset is based on the flow of services it provides. The big advantage of money is its general acceptance in market exchange. In contrast, other financial assets, such as corporate bonds, government bonds, and some bank accounts, must first be liquidated, or exchanged for money, before they can fund market transactions.

Main Idea

Role of Money

As a medium of exchange, money makes it easier to trade, borrow, save, invest, and compare the value of goods and services. Which of these activities do you regularly do?



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Money, however, has one major drawback when compared with other financial assets. Money in the form of currency, demand deposits, and travelers checks earns no interest. Those checking accounts that do earn interest earn less than other financial assets.

Holding wealth in the form of money means passing up some interest that could be earned by holding some other financial asset. For example, suppose a business could earn 4 percent more interest by holding some financial asset other than money. Holding $1 million in money would have an opportunity cost of $40,000 per year. *The interest given up is the opportunity cost of holding money.*

Money Demand and Interest Rates

Money demand is the relationship between how much money people want to hold and the interest rate. The interest earnings that are given up are the cost of holding money. When the interest rate is low, other things constant, the cost of holding money is low. People hold more of their wealth as money. When the interest rate is high, the cost of holding money is high. People hold less money and more assets that pay higher interest. Thus, other things constant, the quantity of money demanded varies inversely with the market interest rate.

The money demand curve, D_m, in Figure 17.2 shows the quantity of money people in the economy demand at alternative interest rates, other things constant. *The quantity of money demanded is inversely related to the price of holding money, which is the interest rate.* Movements along the curve reflect the effects of changes in the interest rate on the quantity of money demanded, other things constant.

Investigate Your Local Economy

Research interest rates offered on savings accounts at local banks or online banks. Would these rates motivate people to deposit their money in these accounts? Record the interest rates you find, and write a paragraph to explain your answer to the question.

money demand
The relationship between how much money people want to hold and the interest rate

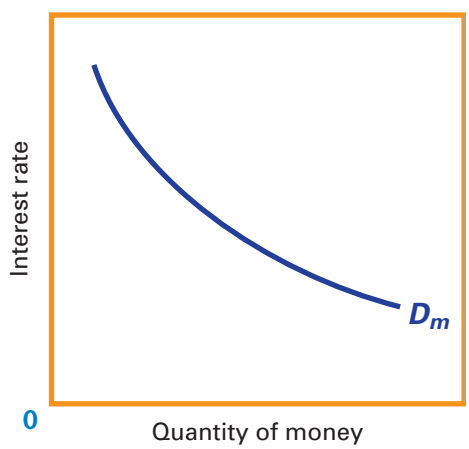
The Graphing Workshop

Demand for Money

Figure 17.2

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The money demand curve, D_m, slopes downward. As the interest rate falls, so does the opportunity cost of holding money. The quantity of money demanded increases.



✓ CHECKPOINT

What explains the shape of the money demand curve?

Money Supply and the Market Interest Rate

The money demand curve has the usual downward sloping shape of other demand curves. The only difference is that the price is measured not by dollars but by the interest rate. What about money supply?

Money Supply

money supply
The stock of money available in the economy at a particular time

Money supply is the stock of money available in the economy at a particular time. Money supply is determined primarily by the Fed through its control over currency and excess reserves in the banking system. The *money supply curve* does not have the usual upward sloping shape of other supply curves. The supply of money, S_m, is depicted as a vertical line in Figure 17.3. A vertical supply curve indicates that the quantity of money in the economy is fixed by the Fed at any given time and is therefore independent of the interest rate. The assumption is that the Fed determines the money supply.

Market Interest Rate

The intersection in Figure 17.3 of the money demand curve, D_m, with the money supply curve, S_m, determines the market interest rate, *i*. That rate equates the quantity of money demanded in the economy with the quantity of money supplied by the Fed. At interest rates above the equilibrium level, the opportunity cost of holding money is higher, so the quantity people demand is less than the quantity supplied. At interest rates below the equilibrium level, the opportunity cost of holding money is lower, so the quantity of money people demand exceeds the quantity supplied.

An Increase in the Money Supply

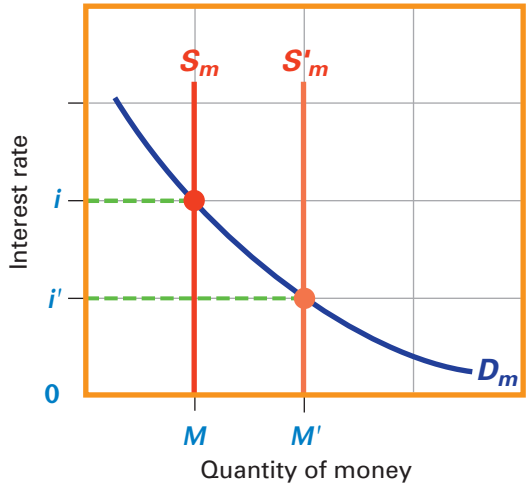
If the Fed increases the money supply, by, for example, purchasing U.S. bonds, the money supply curve shifts to the right, as shown by the movement from S_m to S'_m in Figure 17.3. The interest rate must fall to encourage people

The Graphing Workshop

Effect of an Increase in the Money Supply — **Figure 17.3**

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Because the supply of money is determined by the Federal Reserve, money supply can be represented by a vertical line. The intersection of the supply of money S_m and the demand for money D_m determines the equilibrium interest rate, i. Following an increase in the money supply to S'_m, the quantity of money supplied exceeds the quantity demanded at the original interest rate, i. People who are holding more money than they would like attempt to exchange money for bonds or other financial assets. In doing so, they drive the interest rate down to i′, where quantity demanded equals the new quantity supplied.



to hold the increased supply of money. The interest rate falls until the quantity of money demanded just equals the quantity supplied. With the decline in the interest rate to i' in Figure 17.3, the opportunity cost of holding money falls enough that the public is willing to hold the now-larger supply of money. *For a given money demand curve, an increase in money supply pushes down the market interest rate, and a decrease in the supply of money pushes up the market interest rate.*

Now that you have some idea how money demand and supply determine the market interest rate, you are ready to see how money fits into the economy in the short run. Specifically, how do changes in the supply of money affect aggregate demand and real GDP?

Effect of Lower Interest Rates

Suppose the Federal Reserve believes that the economy is operating below its potential and decides to stimulate output and employment by increasing the money supply. The Fed can try to expand the money supply by

1. purchasing U.S. government securities,
2. reducing the *discount rate* (the rate at which banks can borrow from the Fed), or
3. lowering the required reserve ratio to create excess reserves.

An increase in the money supply reduces the market interest rate. A lower interest rate encourages consumers to save less and borrow more. A lower rate also encourages businesses to invest more in capital goods. Thus, a lower interest rate stimulates consumption and investment. This greater aggregate demand will increase real GDP in the short run, as shown by the movement from Y to Y' in Figure 17.4. Note that the price level also increases.

Thus, monetary policy in the short run influences the market interest rate, which in turn stimulates aggregate demand and increases real GDP. *In the short run, changes in the money supply affect the economy through changes in the interest rate.*

Increasing Interest Rates

Now consider the effect of an increase in the interest rate. Suppose Fed officials decide to reduce the money supply to cool down an overheated economy. The Fed can try to reduce the money supply by

1. selling U.S. government securities,
2. increasing the discount rate, or
3. raising the required reserve ratio.

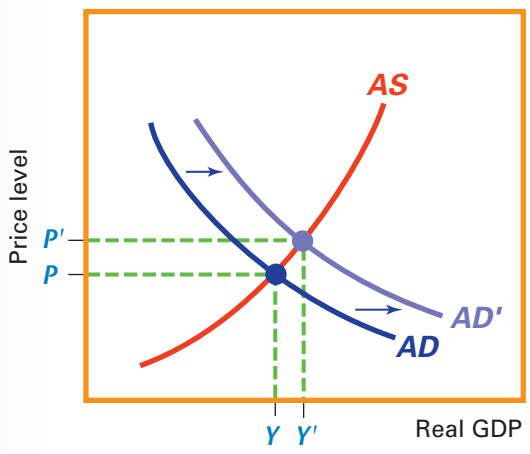
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Why should we care how fast the money supply grows?

Effects of a Lower Interest Rate on Real GDP and the Price Level — **Figure 17.4**

A lower interest rate encourages households to borrow more and save less. It also encourages businesses to invest more. More consumption and investment increases aggregate demand. Therefore, a lower interest rate shifts the aggregate demand curve to the right, thereby increasing employment and output in the short run. In the short run, this increases real GDP and the price level.



A decrease in the money supply would increase the equilibrium interest rate. At the higher interest rate, businesses find it more costly to finance plants and equipment. Households find it more costly to finance new homes and other major purchases. Thus a higher interest rate reduces aggregate demand, and this reduction in aggregate demand will reduce real GDP in the short run.

✓CHECKPOINT

How do changes in the money supply affect interest rates and real GDP in the short run?

The Federal Funds Rate

At 2:15 P.M. on June 29, 2006, immediately following a meeting, the Federal Open Market Committee (FOMC) announced that it would raise its target for the federal funds rate by one quarter of a percentage point to 5.25 percent, the highest rate since March 2001. What is the federal funds rate, and how did the Fed's action affect the economy?

federal funds market

A market for overnight lending and borrowing of reserves held by the Fed for banks

federal funds rate

The interest rate banks charge one another to borrow reserves overnight; the Fed's target interest rate

Federal Funds Market

Because reserves earn no interest, banks usually try to keep excess reserves to a minimum. Banks continuously "sweep" their accounts to find excess reserves that can be put to some interest-earning use. They do not let excess reserves remain idle even overnight. The **federal funds market** provides for overnight lending and borrowing among banks of excess reserves on account at the Fed.

For example, suppose that at the end of the business day, Home Bank has excess reserves of $10,000 on account with the Fed and wants to lend that amount to another bank that finished the day requiring reserves of $10,000. These two banks make a deal in the federal funds market—that is, the market for borrowing and lending reserves at the Fed. The interest rate paid on such loans is called the **federal funds rate** or the *interbank loan rate*. This is the interest rate targeted by the Fed's monetary policy.

Aggressive Rate Cuts

Between June 2004 and June 2006, the Fed raised the federal funds rate 4.25 percentage points in 17 steps. This was the most aggressive effort to slow down



What effect would the Fed's expanding the money supply have on a household's ability to finance a new home?

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the economy in more than a decade. In hiking the target rate on that June afternoon, the FOMC said "the high prices of energy and other commodities have the potential to sustain inflation pressures."

To raise the federal funds rate, the FOMC made open-market sales of government securities, reducing reserves in the banking system until the rate increased to the target level.

Why Target This Rate?

For four decades, the Fed has influenced the money supply by focusing mostly on changes in the federal funds rate. There are many interest rates in the economy—for credit cards, new car sales, mortgages, home equity loans, personal loans, and so on. Why does the Fed choose to focus on the federal funds rate? First, by changing bank reserves through open-market operations, the Fed has a direct lever on this rate. The Fed's ability to influence this rate is stronger than it is for any other market rate. For example, the target rate of 5.25 percent was achieved within days after the Fed's June 29 announcement. Second, the federal funds rate serves as a benchmark in the economy for determining many other interest rates. For example, after the Fed announces a change in its target federal funds rate, major banks around the country often change by the same amount their prime interest rate—the interest rate they charge their best corporate customers.

NET Bookmark

Access the web page for the Federal Open Market Committee through thomsonedu.com/school/econxtra. Under the heading "Meetings and Proceedings of the FOMC," you will find a calendar of meetings. Choose one of the years, and click on "Statement" for all of the meetings in that year. Write a paragraph summarizing the decisions the FOMC made regarding the federal funds rate for that year.

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Recent History of Federal Funds Rate

Figure 17.5 shows the federal funds rate since 1996. Consider what was going on in the economy during the

ETHICS IN ACTION

A Trillion Dollar Bank

In December 2005, Bank of America Corp. received approval from the Federal Reserve Board to acquire credit card issuer MBNA Corporation. The resulting merger made Bank of America the nation's largest credit card issuer, with more than one trillion dollars in assets, but at the cost of some 6,000 jobs. Critics of the proposal worried about the sheer economic power of the resulting institution that would control nearly 10 percent of all bank deposits in the country. Others cited the bankruptcy of the Federal Savings and Loan Insurance Corporation during the savings and loan crisis of the late 1980s. They noted that, should a banking institution the size of the newly formed Bank of America fail, the Federal Deposit Insurance Corporation could not handle it. Such a failure could put the entire economy at risk.

THINK ABOUT IT

Given the consequences of the failure of such an enormous bank, should the government have given its approval to the merger? Why or why not?

Sources: "Fed Gives Blessing to Bank of America-MBNA Merger," Associated Press State and Local Wire, December 15, 2005; Federal Deposit Insurance Corporation 2005 Annual Report, www.fdic.gov/about/strategic/report/2005highlight/2005Highlights.pdf.

period. Between early 1996 and late 1998, the economy grew nicely with low inflation, so the FOMC kept the federal funds rate relatively stable in a range of 5.25 percent to 5.5 percent. In late 1998, fears of a global financial crisis prompted the FOMC to drop its target rate to 4.75 percent.

By the summer of 1999, those fears had subsided, and the FOMC instead became concerned that robust economic growth would trigger higher inflation. In a series of six steps, the FOMC raised the federal funds rate from 4.75 percent to 6.5 percent. In early 2001, fears about declining consumer confidence, weaker capital spending, falling manufacturing output, and a sinking stock market prompted the FOMC to reverse course. That began the series of rate cuts into 2003.

The rate then remained at 1.0 percent for about a year. In mid-2004 the FOMC, concerned again with inflation, began hiking the rate 0.25 percent at each meeting over the next two years. As you can see, by mid-2006, after 17 hikes, the federal funds rate reached 5.25 percent.



Work in groups of three to four students to research the federal funds rate on the Federal Open Market Committee web page, as directed in the Net Bookmark activity. Each group member should choose a different year to research. Compare and discuss your findings as a group, referring to the line graph in Figure 17.5.

✓ CHECKPOINT

What is the federal funds rate, and why does the Fed use it to set monetary policy?

Ups and Downs in the Federal Funds Rate Since 1996 — **Figure 17.5**



To understand the fluctuations of the federal funds rate, consider what was going on in the economy during the periods shown here.

Source: Based on monthly averages from the Federal Reserve Bank.

Assessment 17.2

Key Concepts

1. The demand for money normally grows when there is economic growth. What effect does this growth in the demand for money have on interest rates? Explain your answer.
2. If something happened to cause savers to lose faith in the safety of banks, what might happen to the economy? Explain your answer.
3. People tend to spend, deposit, or invest their cash quickly when interest rates are high. This increases the speed at which financial transactions take place. What then would happen when interest rates are low? How would this affect the economy?
4. If the Fed purchased $2 billion in government bonds, what would happen to the money supply and interest rates in the economy? Why might the Fed implement such a policy?
5. Why might the Fed set a target rate for the federal funds rate that is 1 percent higher than its current rate? What steps would the Fed be likely to take to accomplish its goal?

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Graphing Exercise

6. Use data in the table to construct a double line graph to show changes in the federal funds rate and the prime interest rate over the years from 1996 through 2006. Does there appear to be a relationship between these interest rates? Would you expect to find similar relationships between the federal funds rate and other interest rates? Why or why not?

Think Critically

7. **Government** Investigate the policies of the Reagan administration that were intended to stimulate the economy in 1981 and 1982. Compare these policies with the monetary policy implemented at the same time under the Federal Reserve's Chairman Paul Volcker. How does this show that government policies are not always coordinated?

Average Annual Federal Funds Rate and Prime Interest Rate (percent), 1996–2006

Year	Federal Funds Rate	Prime Interest Rate
1996	5.30%	8.27%
1997	5.46%	8.44%
1998	5.35%	8.35%
1999	4.97%	8.00%
2000	6.24%	9.23%
2001	3.88%	6.91%
2002	1.67%	4.67%
2003	1.13%	4.12%
2004	1.35%	4.34%
2005	3.22%	6.19%
2006*	4.99%	8.25%

*Interest rates for 2006 are based on June data of that year.

Source: *Economic Indicators,* June 2006, p. 30.

Sharpen Your Skills



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Make Predictions

In general, people are pretty smart. They tend to know what's happening in the world by keeping up with the news. Government decisions often come as no surprise to them, including decisions of the Federal Reserve System. In fact, many people think they know what the Fed is going to do long before it does it. If this is true, can the Fed make decisions that surprise people and cause them to change their plans? Or, put more simply, would an interest-rate increase have any impact on your plans if you had been sure for weeks it would take place? Making predictions about the future of the economy is important to business managers and ordinary consumers alike.

What do you think the Fed would do in each of the situations described below? How would your expectations affect your own choices? Explain the reasons for your choice.

Apply Your Skill

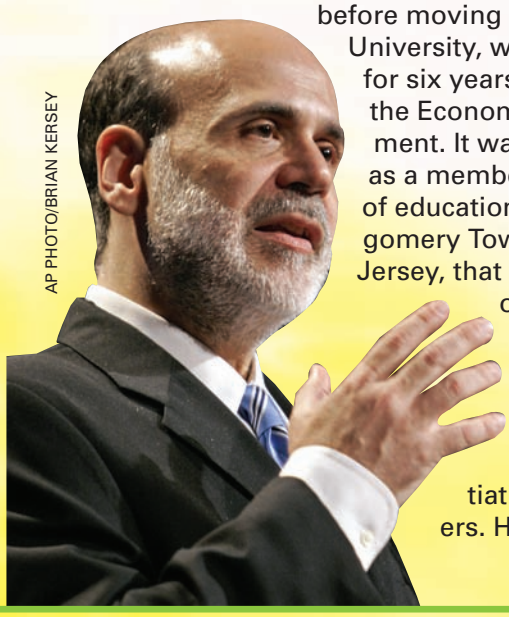
1. You have a $100,000 mortgage on a house that has an adjustable interest rate of 6.0 percent that could change at any time. The economy has been growing rapidly for the past six months, and the rate of inflation has been going up steadily. You can refinance your mortgage at a fixed rate of 6.5 percent if you do it now. Would you refinance your mortgage now to lock in the rate?
2. You plan to sell your home at some time in the next year or two. Right now, mortgages can be obtained at an interest rate of 6.0 percent. The economy has been growing rapidly for the past six months, and the rate of inflation has been going up steadily. Would your choose to put your home on the market right now, or would you wait awhile?
3. You have found a home you wish to buy. You need to take out a $100,000 mortgage to make this purchase. Your bank offers to lend you the money at either a 7 percent fixed rate or at an adjustable rate that currently is 6.5 percent. On one hand, you like the idea of having a fixed rate that you know won't change in the future. On the other, you would like to pay the lower rate now. The economy has been in decline for six months, and the unemployment rate has reached 7 percent. Which mortgage would you choose?

movers & shakers

Ben Bernanke *Federal Reserve Chairman*

The individual who many believe holds the most powerful economic post in the United States spent his childhood in the rural town of Dillon, South Carolina. Ben Bernanke, appointed in February 2006 to replace Alan Greenspan as chairman of the Federal Reserve, tested out of first grade. As a high school graduate, he received the highest score among his South Carolina peers on his college entrance exam. His stellar grades continued at Harvard, where he majored in economics and graduated summa cum laude. In 1979 he received his Ph.D. from the Massachusetts Institute of Technology for his research on the Great Depression.

Bernanke's first teaching job was at Stanford University. He also taught at New York University before moving to Princeton University, where he served for six years as chairman of the Economics Department. It was in this job and as a member of the board of education in Montgomery Township, New Jersey, that Bernanke developed a reputation as a skilled negotiator, including during contract negotiations with teachers. He was considered an expert at gaining consensus while keeping morale high.



AP PHOTO/BRIAN KERSEY

After leaving Princeton, Bernanke moved on to the Federal Reserve's Board of Governors, and later to the President's Council of Economic Advisers. He has authored three textbooks on macroeconomics, and is especially interested in the causes of the Great Depression, a period of U.S. history when deliberate actions by the Federal Reserve caused serious deflation.

President George W. Bush appointed Bernanke chairman of the Federal Reserve on February 1, 2006. The appointment was a surprise to some, who disliked the fact that Bernanke has never actually worked in corporate America. These critics fear his decisions will not be based on real-life economic experience, but rather on theory. Others are concerned that Bernanke's style is much different from that of his predecessor, Alan Greenspan.

Greenspan, who served as Fed chairman for 18 years, often was considered evasive and difficult to read. Bernanke, on the other hand, has long advocated transparency in Fed policy, by stating clearer goals and improving signals to the public about the Fed's intentions. His openness was apparent as a member of the Fed's Board of Governors, where he pushed his colleagues to give investors, businesses, and households a better feel for where policy was headed. Only time will tell if Bernanke's straight-shooter approach in such a powerful position will be better received than that of the tight-lipped Greenspan.

SOURCE READING

What is the overall role of the Federal Reserve System, and why do many consider its chairman to hold the most powerful economic post in the country?

ENTREPRENEURS IN ACTION

Imagine you are the chairman of the Federal Reserve. Give two reasons why you think it would be best to be plainspoken and straightforward about the Fed's intentions. Give two reasons why it might be better to remain tight-lipped about the Fed's intentions.

Sources: "Bernanke Should Keep Talking," Associated Press, www. msnbc.msn.com/id/13506023/; "At the Fed, an Unknown Became a Safe Choice," *New York Times*, October 26, 2005; http://yaleeconomicreview. com/issues/spring2006/ bernanke.php; www.federalreserve.gov/bios/bernanke.htm.

17.3 Monetary Policy in the Long Run

Objectives

- Understand why changes in the money supply affect only prices in the long run, not real GDP.
- Examine the historical link between money supply growth and inflation.
- Determine why political independence of central banks results in lower inflation.

Overview

In the short run, money influences aggregate demand and real GDP through its effect on interest rates. In the long run, the impact of money on aggregate demand is more direct. If the Fed increases the money supply, people will try to spend more. However, because the economy's potential output remains fixed at a point in time, this greater spending simply increases the price level in the long run. There is more money chasing the same output. Thus, if the economy is already producing its potential output, increases in the money supply result only in inflation in the long run.

Key Term

euro

In the News

The Problems of Too Much or Too Little Money

What happens when there is too much money in circulation? In the 1990s, extremely high inflation in Russia following the breakup of the Soviet Union increased Russian demand for so-called hard currencies, including the U.S. dollar. As a result, Russians traded their rubles and hoarded their dollars. In 1995, a Russian central banker claimed that the value of Russians' dollar holdings exceeded the value of their ruble holdings. What about the opposite problem when there is not enough money to go around? This happened a few years ago to Panama, a country that relies on the U.S. dollar as its currency. In 1988, in response to charges that Panama's leader was involved in drug dealing, U.S. officials froze Panamanian assets in the United States. This touched off a panic in Panama as bank customers tried to withdraw their deposits. Banks were forced to close for nine weeks. Dollars were hoarded, and people resorted to barter. Because barter is less efficient than a smoothly functioning monetary system, Panama's GDP fell by 30 percent in 1988. Both of these examples show that when a country has too much or too little of its currency available, people will come to rely on another mechanism for exchange. This alternative is seldom as efficient as a smoothly functioning monetary system, however. It has been said that no machine increases the economy's productivity as much as properly functioning money.

THINK ABOUT IT

Why did Panama's GDP decrease as a result of people hoarding their money?

Long-Run Effect of Money Supply Changes

Monetary authorities try to keep the economy on an even keel by smoothing fluctuations in the economy over the business cycle. These are based mostly on short-run adjustments in the federal funds rate. What happens in the long run?

Production in the Long Run

In the short run, the aggregate supply curve slopes upward. Thus, an increase in aggregate demand increases both real GDP and the price level, as was shown in Figure 17.4. In the long run, the economy produces its potential level of output, which is the economy's maximum sustainable output. Potential output is determined by the supply of resources in the economy, the state of technology, and the rules of the game that nurture production and exchange. Potential output is the economy's normal capability on a regular or sustained basis. The economy can't produce any more than potential output in the long run.

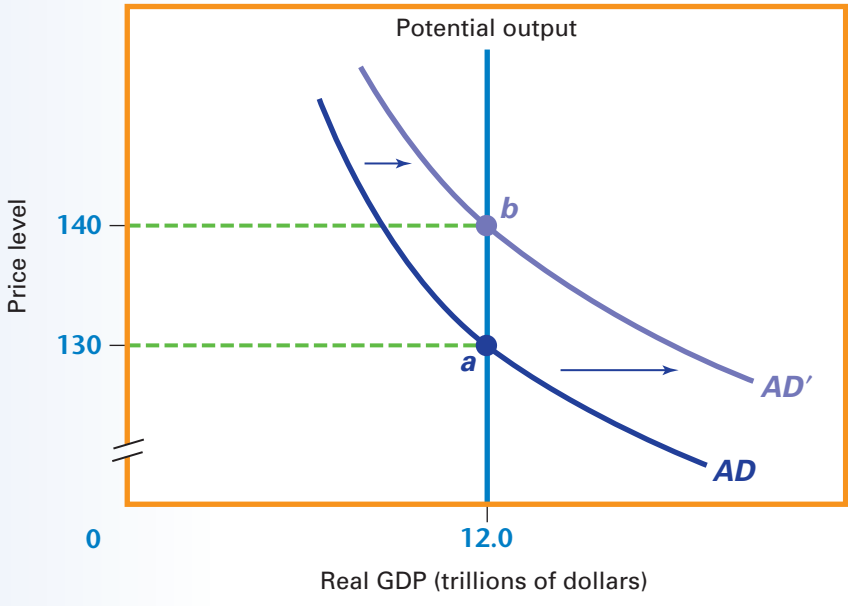
An increase in the money supply doesn't change potential output. An increase in the money supply means only that there is more money chasing after the same potential output.

Changes in Aggregate Demand

The economy cannot produce more than its potential output in the long run. You could think of the economy's long-run supply curve as a vertical line drawn at the economy's potential level of output, as shown in Figure 17.6. That figure also shows the long-run effect of an increase in the money supply. An increase in the money supply causes a rightward shift of the aggregate demand curve from *AD* to *AD′*. Because output in the long run is fixed at the economy's potential output, the rightward shift of the aggregate demand curve leads only to a higher price level. Output remains unchanged at its potential level. The economy's potential output level is not affected by changes in the money supply. *In the long run, increases in the money supply result only in higher prices.*

An Increase in the Money Supply in the Long Run — **Figure 17.6**

An increase in the supply of money in the long run results in a higher price level, or inflation. Because the long-run aggregate supply curve is fixed, increases in the money supply affect only the price level, not real output.



✓CHECKPOINT

Why do changes in the money supply affect only the price level in the long run, not real GDP?

Long-Run Evidence

In the United States and around the world, what has been the long-run relationship between increases in the money supply and inflation?

Money Supply Growth and Inflation in U.S. History

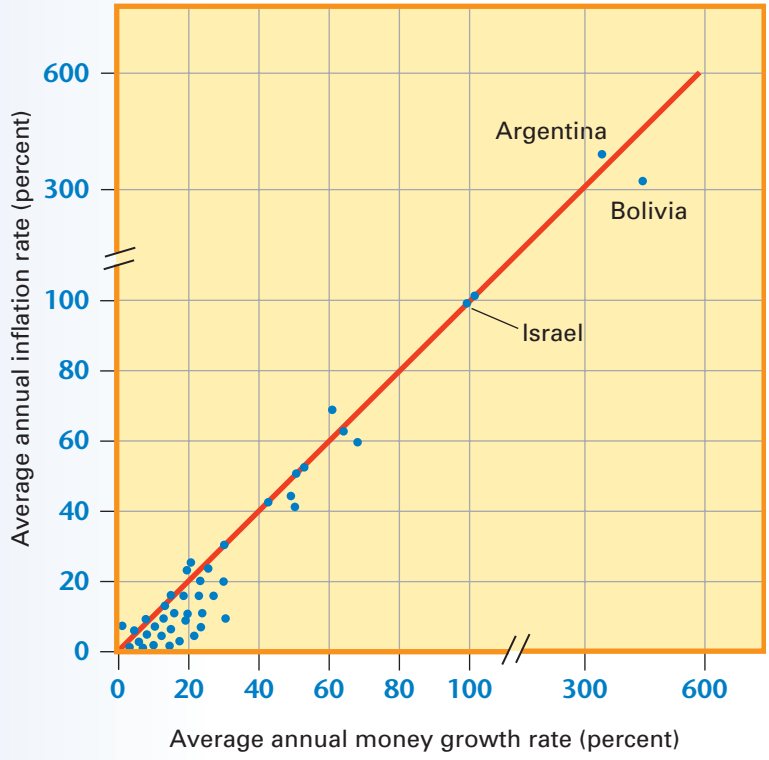
Since the Federal Reserve System was established in 1913, the United States has suffered three bouts of high inflation. These periods occurred from 1913 to 1920, 1939 to 1948, and 1967 to 1980. Each was preceded and accompanied by a corresponding growth in the money supply. Each U.S. episode of high inflation was related to a rapid growth in the money supply.

Money Supply Growth and Inflation Around the World

What has been the link around the world between changes in the money supply and inflation in the long run? Again, monetary theory points to a relationship in the long run between the percentage change in the money supply and the percentage change in the price level. Figure 17.7 illustrates this using the average annual growth rate in M2 over a 10-year period and the average annual inflation rate during that period for dozens of countries around the world. As you can see, the points fall rather neatly along the line, showing a positive relation between money growth, measured along the horizontal axis, and inflation, measured along the vertical axis.

The Graphing Workshop

Inflation and Money Growth Worldwide — **Figure 17.7**



Inflation was higher in countries where the money supply grew faster.

Source: The World Bank, *World Development Report 1992* (New York: Oxford University Press, 1992), Table 13. Figures are annual averages between 1980 and 1990.

Extremely high inflation, or *hyperinflation,* became a problem for some countries. In every case, hyperinflation has been accompanied by extremely rapid growth in the supply of paper money. For example, Argentina—which had the highest average annual inflation rate over the 10-year period in the sample, at 395 percent—also had the highest average annual rate of growth in the money supply, at 369 percent.

Argentina, Bolivia, and Israel all managed to tame inflation. Households in all three countries, perhaps mindful of their experience with hyperinflation, still hoard a lot of U.S. currency. The latest victim of hyperinflation is Zimbabwe, where inflation in 2006 topped 1,000 percent. The price of a car battery in Zimbabwe in 2006 could have purchased 14 new cars there in 1996.

The most famous hyperinflation during the last century was in Germany between August 1922 and November 1923, when inflation averaged 322 percent *per month.* Inflation was halted when the German government created an independent central bank that issued a limited supply of new currency convertible on demand into gold.

✓ CHECKPOINT

What has been the link between money growth and inflation in the United States and around the world?

Other Issues in Monetary Policy

Three issues remain with regard to monetary policy:

1. the relationship between inflation and the central bank's independence from political pressure,
2. the problem of deflation, and
3. the lags involved with monetary policy.

Span the Globe

Hyperinflation and Political Instability

Incidents of hyperinflation often have been accompanied by political upheaval. Almost every country that has experienced hyperinflation has had subsequent political instability as desperate citizens looked for ways to protect themselves. In Germany, the hyperinflation following World War I led many people to lose faith in the democratic government. Both the Communist Party and the rising Nazi Party thought they could use this uncertainty to gain control of the country. The democratic government was able to remain in power by undertaking currency reform, but the memories of hyperinflation played a role in the eventual rise of the Nazis in the 1930s. More recently, hyperinflation in Bolivia resulted in no less than ten different rulers between 1978 and 1982. These included several military governments as the result of numerous overthrow attempts. Not until after a democratically elected government issued reforms to stop the inflation did political stability begin to emerge in Bolivia. A similar situation developed in Argentina. Hyperinflation in that country sparked a massive economic crisis, which resulted in four different presidents during one two-week period of 2001. After weeks of public rioting and looting, it looked as if democracy might be dead in Argentina. However, a series of government reforms helped ease the economic crisis. The violence stopped, and people were willing to give the government another chance. Ultimately, because of the economic crisis, the country defaulted on the loans it had been given and agreed to a debt restructuring plan with the International Monetary Fund.

THINK CRITICALLY

Why do you think a country tends to experience political instability when hyperinflation occurs in its economy?

Sources: "Argentina's Debt Deal," *Miami Herald,* March 8, 2005; "Close Race in Argentine Election," CNN report, www.cnn.com/2003/WRLD/americas/04/27/argentina.poll/index.html.

Fed Independence

Some economists argue that the Fed would do better in the long run if it were committed to the single goal of price stability. To focus on price stability, a central bank would have to remain insulated from political pressure. Elected officials usually urge the Fed to stimulate the economy whenever it is performing below its potential. All this short-run stimulation, however, can lead to inflation in the long run.

When the Fed was established in 1913, several features insulated it from politics, such as the 14-year terms with staggered appointments for the seven board governors. Also, the Fed does not rely on a Congressional appropriation. The Fed has its own source of income.

Here's how the Fed earns a profit. The Fed, like any other bank, has a balance sheet. More than three-fourths of the Fed's assets are U.S. government securities. The Fed bought them through open-market operations. They are IOUs from the federal government, and they earn interest for the Fed.

More than three-fourths of the Fed's liabilities are Federal Reserve notes held by the public. These notes—U.S. currency—are IOUs from the Fed and are therefore liabilities of the Fed. However, the Fed pays no interest on Federal Reserve notes.

The Fed's primary assets—U.S. government securities—earn interest for the Fed. Its primary liabilities—Federal Reserve notes—require no interest payments by the Fed.

The Fed also earns income from various services it provides member banks. After covering its operating costs, the Fed turns over any remaining income to the U.S. Treasury. In some years the Fed turns over more than $20 billion. You might think of this as profit resulting from the Fed's ability to issue notes and create bank reserves.

Central Bank Independence and Inflation

Does a central bank's independence from political pressure affect its performance? In one study, the central banks of 17 advanced industrial countries were ranked from least independent to most independent. It turned out that inflation during the 15-year span studied was lowest in countries with the most independent central banks and highest in countries with the least independent central banks. The U.S. central bank is considered relatively independent, and inflation here averaged about halfway between the most independent and least independent groups of banks.

Independence Trend

The trend around the world is toward greater central bank independence from political pressure. For example, Australia and New Zealand, two countries that had problems with inflation, have amended laws governing their central banks to make price stability the primary goal. Chile, Colombia, and Argentina—developing countries that have experienced hyperinflation—have legislated more central bank independence.

The framework that established the new European currency, the **euro**, identified price stability as the main objective of the new European Central Bank. That bank announced a policy to keep inflation under 2.0 percent. In fact, the bank came under criticism for appearing reluctant to cut its target interest rate even though a recession loomed and the unemployment rate exceeded 8 percent. The Central Bank feared that a cut in its target interest rate would fuel inflation.

euro
The new European common currency

NET Bookmark

Argentina limited its central bank's ability to issue new currency by creating a currency board. The currency board required that each new peso be backed by one U.S. dollar held in reserve by the bank. Access the article "Are Currency Boards a Cure for All Monetary Problems?" through thomsonedu.com/school/econxtra. This article, from the IMF publication *Finance and Development,* explores the use of independent currency boards to control the supply of money in advanced industrial countries. What does the article note as the advantages and disadvantages of having a currency board in a country?

thomsonedu.com/school/econxtra

Could Deflation Pose a Problem?

Hyperinflation can bring an economy to its knees. But deflation, a decline in the average price level, is no picnic either. Falling prices during the Great Depression caused consumers to delay major purchases, waiting for prices to drop even more. This reduced aggregate demand, output, and employment. Investment also tanked because lower prices erased profits. Further, borrowers found it more difficult to pay off their debts as their incomes fell.

In recent years, Japan has suffered from deflation averaging about 1 percent a year. Germany, now the world's third largest economy (behind the United States and Japan) also feared deflation. Former Fed Chairman Alan Greenspan voiced concern about the possibility of deflation here. He said the Fed would fight deflation as fiercely as it fights high inflation. Most economists including Greenspan don't think the nation will experience deflation. Regardless, you should know that deflation can create as much havoc in an economy as high inflation.

Lags and Monetary Policy

One final consideration: How do the lags involved with monetary policy compare with those involved with fiscal policy? Recall that one problem with fiscal policy involves lags at several stages of the process. Does monetary policy face the same problems?

The *recognition lag,* the time required to identify a problem with the economy, is probably about the same for both policies. Monetary and fiscal decision makers are each supported by a competent team of economists tracking the economy.

With regard to the *decision-making lag,* monetary policy has the advantage, because the FOMC can make a decision during one meeting. Once a decision is made, monetary policy also has the advantage because the FOMC can begin executing open-market operations within minutes. Fiscal policy may take months to implement, so the *implementation lag* is shorter for monetary policy.

Finally, with regard to the *effectiveness lag,* it may be a toss-up. Market interest rates can move quickly in response to a change in Fed policy, but there is no way to know how long it will take businesses and consumers to react to changed interest rates. The full effect of changes in the money supply may take a year or more, as long as it may take fiscal policy to show its full effects.

✓ CHECKPOINT

What is the relationship between inflation and the political independence of central banks?



What advantage does monetary policy have over fiscal policy regarding decision-making lags? What role does the FOMC play in this?

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Key Concepts

1. If the Fed worked to keep the unemployment rate at 3 percent by increasing the money supply year after year, what would happen to prices? Would the Fed be successful in reaching its goal in the long run? Why, or why not?
2. Why would deflation be harmful to the economy?
3. Why might it take many months or possibly more than a year for people and businesses to respond to a change in the money supply? What does this tell you about the usefulness of monetary policy?

Graphing Exercise

4. Use data in the table to create a double line graph of interest rates and changes in real (adjusted for inflation) GDP from 1996 through 2006. Does there seem to be a relationship between these values? Which do you think is the cause and which is the effect? Explain your answer.

Interest Rate on 3-Year Government Bonds and Change in Real GDP, 1996–2006

Year	Interest Rate on 3-Year Government Securities	Percentage Growth in Real GDP
1996	5.99%	3.70%
1997	6.10%	4.44%
1998	5.14%	4.20%
1999	5.49%	4.50%
2000	6.22%	3.75%
2001	4.09%	0.80%
2002	3.10%	1.60%
2003	2.10%	2.50%
2004	2.78%	3.90%
2005	3.93%	3.20%
2006*	5.09%	4.25%

*Data for 2006 are based on the first six months of that year.
Source: *Economic Indicators,* August 2006, pp. 2 & 30.

Think Critically

5. **Management** Business owners cannot be sure what policy the Fed will follow. When they guess wrong, it can have a devastating effect. In 1978, for example, the owners of a small steel mill in upstate New York borrowed $50 million to purchase new equipment. They agreed to pay a flexible rate of interest set at the prime rate plus 1 percent. (When the prime rate was 8 percent, they were required to pay 9 percent.) When the loan was first taken out, they were paying 9 percent interest, or $4.5 million per year. Three years later, actions of the Federal Reserve System had caused the prime interest rate to grow to 20 percent, forcing the firm to pay 21 percent on its loan. This amounted to $10.5 million in interest per year. The firm was unable to make these payments and failed in 1983. If you owned a firm and were considering borrowing funds, how concerned would you be over what the Fed's future monetary policy might be? Would you avoid borrowing if you could? How might this uncertainty affect the economy?

CONNECT TO HISTORY



Deflation in the Nineteenth Century

Following the Civil War, prices in the United States, especially for agricultural products, began to suffer from deflation. In the decade following 1866, wheat prices dropped from $2.06 a bushel to $1.00. Fifteen years later, farmers were receiving only 60 cents a bushel for wheat. Over the same period, corn prices dropped from 66 cents a bushel to 30 cents. Some decline in prices was due to the introduction of new techniques and equipment, which helped farmers become more productive, thus increasing supply faster than demand. Farmers, however, wanted inflation. Many had run up debts to buy or expand farms, to buy equipment, or to support themselves after a bad year. While the cost to pay back their loans remained the same, lower prices meant they had to produce more to earn enough money to make the payments.

Farmers saw one solution to their problem in the government's issuance of Greenbacks. This was paper money issued during the Civil War, which had no backing in gold or silver. After the War, the government had been withdrawing Greenbacks, thereby leaving less money in circulation. The effect was that fewer dollars were chasing after more goods, thus bringing lower prices. For farmers, the answer seemed to be the government's issuing as many Greenbacks as it took to raise prices. This idea was so strong that a political party—the Greenback Party—was formed around it. Business interests, however, opposed this solution, and most politicians pursued a policy of "sound money."

In 1873, the government passed the Coinage Act. The Act said that the government would no longer buy silver to turn into coins. The cost of silver was more than the government was willing to pay. Farmers were outraged because they believed more silver purchases would increase the money supply, resulting in inflation and higher farm prices. Farmers and now silver miners, referring to the Act as the "Crime of '73," demanded that the government resume the buying and coining of silver. The government responded by passing the Bland Allison Act (1878) and the Sherman Silver Purchase Act (1890). These acts authorized a limited amount of silver to be purchased and turned into coins. Neither act created the inflation desired by the farmers and silver miners, however.

In the election of 1896, which pitted William Jennings Bryan for the Democratic and Populist parties against Republican William McKinley, a major issue was the gold standard. Bryan traveled the country, arguing against the government policy and demanding an increased money supply. Despite his defeat, Bryan's "cross of gold" speech stands as one of the most famous in American history. However, by the turn of the century the farmers got their wish, and prices stopped declining. This had nothing to do with their efforts to change government policy, but with the additional deposits of gold that were discovered in Alaska and other parts of the world, which doubled the world's supply of gold.

THINK CRITICALLY

Write a paragraph to explain the effect deflation had on farmers' incomes and their ability to meet their fixed costs (mortgages, etc.). Assume that a farmer's incomes and fixed costs are both $1,000 and that there is 10 percent deflation each year. What would the deflation do with the farmer's ability to meet his debts? Next, assume income and fixed costs of $1,000 and a 10 percent inflation rate. What would this do to the farmer's ability to meet his debts? In what way is the homebuyer of today similar to the farmer of the late 1800s?

17 Chapter Assessment

Summary

17.1 How Banks Work

a To establish a bank, a group of people must obtain a charter from either the federal or state government. They must agree to invest an amount of money in the new bank. The bank will report its financial status on a *balance sheet,* which lists its *assets* on one side and its *liabilities* and the amount of the owners' equity on the other. The totals on both sides must be equal. Under the fractional reserve system, banks are required to maintain a fraction of deposits on reserve.

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b New funds deposited in a bank can be multiplied by the banking system into much larger increases in total deposits over time. When the Fed buys a bond from a bank or the public, the money paid is new to the economy. The bond purchase will increase excess reserves, which the bank can lend. When the borrower spends the checkable deposit, that money is received as income by someone else, who will usually deposit it back into a bank. The bank then, after holding back its required reserve, will make additional loans. This cycle of deposits, excess reserves, loans, spending, and more deposits can be repeated many times, causing the money supply to grow by a multiple of the original bond purchase.

c The *money multiplier* is limited by the *required reserve ratio.* When banks are required to keep more deposits on reserve, they are less able to make loans so the money-creation process will be slowed.

17.2 Monetary Policy in the Short Run

a People demand money (1) to carry out financial transactions and (2) to have money on hand as a store of value. The amount they wish to hold at any time depends on many factors, including the interest rate. When interest rates are low, people are willing to hold more money.

b The *money supply* is determined by the amount of money that the Federal Reserve System has supplied to the economy. The money supply can be viewed as a vertical line graph. The intersection of a demand for money with the supply of money determines the market interest rate in the economy. An increase in the money supply will lead to a lower interest rate while a decrease in the money supply will cause the interest rate to rise. Lower interest rates stimulate the economy in the short run while higher rates slow its growth.

c The Fed targets the *federal funds rate,* which is the rate banks charge each other for borrowing bank reserves. The Fed has tighter control over it than over other interest rates. When the Fed changes the federal funds rate, most other interest rates change, too.

17.3 Monetary Policy in the Long Run

a Production in the long run cannot be sustained above the economy's potential. Efforts to expand aggregate demand and production beyond potential output can succeed in the short run, but in the long run will cause prices to rise and production to fall back to its potential.

b All developed nations have a monetary authority similar to the Fed. In some nations, this authority is quite independent of the political process. In others, it is controlled more by political figures. In these latter nations, inflation rates have tended to be higher than in nations where the monetary authorities are more independent.

c Deflation creates instability because falling price levels cause consumers to delay major purchases and cause businesses to put off investments. Some people recently believed there was a danger of deflation in the United States and in other developed nations.

d There are lags in the effectiveness of monetary policy. It takes time for the Fed to recognize a problem, and for the economy to respond to the changed policy.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the correct answer. Some terms may not be used.

_____ **1.** Bank reserves in excess of required reserves

_____ **2.** The stock of money available in the economy at a particular time

_____ **3.** Any physical property or financial claim that is owned

_____ **4.** The dollar amount of deposits that a bank must hold in reserves

_____ **5.** The interest rate charged in the federal funds market

_____ **6.** The relationship between how much money people want to hold and the interest rate

_____ **7.** A Fed regulation that dictates the minimum percentage of deposits each bank must keep in reserve

_____ **8.** A financial statement showing assets, liabilities, and net worth at a given time

_____ **9.** An amount owed

_____ **10.** The multiple by which the money supply increases as a result of an increase in excess reserves in the banking system

a. asset
b. balance sheet
c. euro
d. excess reserves
e. federal funds market
f. federal funds rate
g. liability
h. money demand
i. money multiplier
j. money supply
k. net worth
l. required reserve ratio
m. required reserves

Review Economic Concepts

11. True or False Anyone who has enough money has the legal right to start a banking business.

12. A bank's *balance sheet* lists its *assets* on one side and its *liabilities* and the amount of the owner's __?__on the other.

13. The *required reserve ratio* is the

a. amount of money a bank's owners must invest in the bank.

b. share of its deposits that a bank may lend.

c. amount of its deposits that a bank must hold on reserve.

d. share of its deposits that a bank must hold on reserve.

14. True or False If the Fed bought a $100,000 government bond from a bank, the money supply would immediately grow by more than $100,000.

15. If the Fed lowered the *required reserve ratio* from 10 percent to 8 percent, the money __?__ would increase from 10 to 12.5.

16. If people choose to hold a smaller share of income they receive in cash and deposit more of their earnings in checking accounts, the money expansion will be

a. greater than it was in the past.

b. the same as it was in the past.

c. smaller than it was in the past.

d. carried out more slowly than it was in the past.

17. True or False The demand for money is a measure of a stock. It shows the quantity of money people demand at various interest rates.

18. Which of the following events would reduce the impact of the *money multiplier*?

a. The Fed purchases additional government bonds.

b. Banks choose to allow excess reserves to sit idly in the bank vault.

c. The Fed lowers the required reserve ratio.

d. The federal government borrows and spends more money.

19. If the Fed increases the *money supply,* the demand curve for money will
    a. remain unchanged.
    b. immediately shift to the right.
    c. immediately shift to the left.
    d. eventually shift to the left.

20. **True or False** The opportunity cost of holding cash is the interest that could have been earned but is forgone.

21. Lower interest rates stimulate the economy, while higher rates slow its __?__.

22. The Fed could increase interest rates by
    a. buying additional government bonds.
    b. lowering the required reserve ratio.
    c. lowering the discount rate.
    d. selling some of its government bonds.

23. The Fed's interest rate target is __?__.

24. **True or False** Inflation is likely to occur if the Fed increases the *money supply* when the economy is already at its potential level of output.

25. By increasing the *money supply,* the Fed can sometimes
    a. increase output beyond the economy's potential in the short run.
    b. increase output beyond its potential in the long run.
    c. decrease output to its potential in the short run.
    d. decrease output below its potential in the long run.

26. Countries that have experienced high rates of inflation also have usually had
    a. totalitarian forms of government.
    b. independent monetary authorities.
    c. rapid growth in their money supplies.
    d. large government budget surpluses.

27. __?__ may result from a decline in aggregate demand that forces the price level to fall.

Apply Economic Concepts

28. **Calculate the Impact of a Change in the Reserve Ratio** Suppose that the Fed decided to increase the reserve ratio from 10 to 12.5 percent. In theory, how would this change the value of the money multiplier? What would this do to the amount of each checking deposit that banks could lend? How would this decision affect interest rates and the economy? Explain your answer.

29. **Decide How Much Cash to Hold** Imagine that it is 10 years in the future. You are married and have two young children. Every month you pay $800 for your rent, $300 for your car loan, and at least $1,900 in other costs of living. You are trying to save $300 from every paycheck to make a down payment on a house in a few years. You earn a salary that provides you with a take-home pay of $2,000 every two weeks. Your savings account currently pays 2 percent interest. How much of your bi-weekly pay would you take in cash, deposit in your checking account, and put in your saving account? How would your decision change if the interest rate on your saving account increased to 10 percent?

30. **Choose When to Borrow** Imagine that you have a job that pays you a good wage. You have decided to borrow $20,000 to buy a new car. Right now the interest rate on a new-car loan is 9 percent. You have read in the newspaper that the Fed is likely to lower interest rates soon because many workers are being laid off and unemployment is on the rise. You believe that if you wait a few months, you might be able to borrow the money you need at only 7 percent interest. Should you buy the car now or wait for lower interest rates? What else should concern you? Explain your answers.

31. **Decide Whether to Accept an After-School Job** You spend many hours every week doing school work and helping around your home. You like to go out with your friends on the weekend. You really don't have much spare time. Interest rates are low, and the economy is booming. On your way home from school, you notice a sign in the window of a store that promises a $10 per-hour wage for anyone who accepts a job as a sales clerk. When you ask about the job, the store owner

says she will hire you only if you agree to work a minimum of 16 hours each week. You accept the job, but you're not happy with the number of hours you must work. After you receive your first paycheck, you go shopping and find that because of taxes and inflation your money doesn't go very far. You decide you really don't want the job so you hand in your resignation and go back to asking your parents for money. Explain how this story is related to economic problems that take place when the Fed tries to move production in the economy to exceed its potential.

32. **Sharpen Your Skills: Make Predictions** In June 2004, the Federal Reserve began a policy of increasing the federal funds rate from the lowest rate in the last four decades of 1.0 percent. Over the next two years this key rate was raised 17 times to reach a level of 5.25 percent on June 29, 2006. The Fed's stated reason for this policy was to head off the possibility of increasing rates of inflation. A problem with this policy, however, was the fact that a significant cause of higher prices at that time was the rapidly growing cost of energy. Between June 2004 and June 2006, the price of a barrel of oil more than doubled from less than $30 to more than $70. It was not clear that the international price of oil would respond to changes in interest rates in the United States. What has happened to the federal funds rate and the price of oil since 2006?

33. **Construct a Graph of Demand and Supply for Money** The hypothetical data in the table represents the demand and supply for money in the U.S. economy. Construct a graph from these data. What is the equilibrium interest rate in this example? What are two events that might cause the equilibrium interest rate to increase? What are two events that might cause the equilibrium interest rate to fall?

34. **Diagram the Check-Clearing Process** When you deposit your paycheck in your bank, it must have the check cleared to obtain the funds it credits to your account. Here are the steps that take place.

- You deposit your check for $250 in Bank ABC. The check was drawn on Bank XYZ, which is located in a different community in your state.
- Your bank credits your account for $250 and sends the check to the nearest Federal Reserve Bank.
- The Federal Reserve Bank credits Bank ABC's account for $250 and deducts this amount from Bank XYZ's account.
- The Federal Reserve Bank sends the cancelled check to Bank XYZ, which will draw down your employer's checkable deposits by the amount of the check, keep a record of the check and possibly send the cancelled check to your employer.

Draw and label a diagram to show this process.

Demand and Supply for Money (in billions of dollars)

Amount Demanded	Amount Supplied	Interest Rate
$ 500	$1,000	12.0%
$ 750	$1,000	10.0%
$ 1,000	$1,000	8.0%
$ 1,250	$1,000	6.0%
$ 1,500	$1,000	4.0%

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35. Access **EconNews Online** at thomsonedu.com/school/econxtra. Find the article entitled "Will the Fed Raise Rates?" Read the article, and then answer this question: What was the relationship between the lack of inflation in the economy in late 2003 and the large numbers of unemployed and underemployed workers?

Unit 6



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The International Economy



International Trade and Finance



Economic Development

Comparative advantage, specialization, and exchange help people get the most from their scarce resources. Despite the clear benefits from free international trade, trade restrictions date back centuries. Pressure from producers on governments to impose trade barriers continues to this day. Still, the United States plays a major role in the world economy, not only as the largest importer but also as one of the largest exporters. While the U.S. dollar remains the currency of choice in world trade, all nations face the challenge of achieving greater stability in their global finances.

18 International Trade and Finance

18.1 Benefits of Trade

18.2 Trade Restrictions and Free-Trade Agreements

18.3 Balance of Payments

18.4 Foreign Exchange Rates



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CONSIDER

If the United States is such a rich and productive nation, why are so many goods and services imported?

Why isn't the United States self-sufficient?

If free trade is such a good idea, why do many producers try to restrict foreign trade?

What's up with the euro?

Is a growing U.S. trade deficit a growing worry?

What "fudge factor" guarantees that the balance-of-payments accounts do, in fact, balance?

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18.1 Benefits of Trade

Objectives

- Identify sources of comparative advantage.
- Discuss the gains from international trade even without comparative advantage.
- Describe the most important U.S. exports and imports.

Overview

This morning you put on your Levi jeans made in Mexico, pulled on your Benetton sweater from Italy, and laced up your Timberland boots from China. After a breakfast that included bananas from Honduras and bacon from Canada, you strapped on your Jansport backpack from Indonesia and headed for school in a Swedish Volvo fueled by Venezuelan oil. The world is a giant shopping mall, and Americans are big spenders. Foreigners buy American products, too—products such as grain, personal computers, aircraft, movies, trips to Disney World, and thousands of other goods and services.

Key Terms

world output

European Union (EU)

In the News

Comparative Advantage in a Dynamic World

Today we read of "American" jobs, especially in the textile industry, moving to China and other low-wage countries. Such job migrations are nothing new. At one time Great Britain had the comparative advantage in textile production; this advantage gradually shifted to New England. Following another shift in comparative advantage, production moved to the Carolinas. Recently China has gained the comparative advantage in manufacturing textiles. Because of changes in technology and in the supply of workers, shifts in comparative advantage across countries will become greater and more frequent. Much of this has occurred because services have become increasingly tradable. It used to be that an item was tradable only if it could be boxed and shipped. Technology has changed all this by greatly expanding what services can be traded across international borders. Fiber optics and the Internet become the "boxes" that allow services such as x-ray evaluations, software development, and call centers to be "shipped" to Bombay. What's more, in the past, a comparative advantage, once lost, seldom returned. This is no longer the case. For example, if Boeing loses its comparative advantage to Airbus today, it might win it back next year or the year after. If a Cincinnati radiologist loses work on x-ray evaluations to India, she may acquire new skills to regain her comparative advantage. In the future, it's going to take a nimble workforce to maintain or to regain a comparative advantage.

THINK ABOUT IT

What services have become more tradable because of improvements in technology?

Sources: Jagdish Bhagwati, "A New Vocabulary for Trade," *Wall Street Journal,* August 4, 2005; Alan S. Blinder, "Offshoring: The Next Industrial Revolution?" *Foreign Affairs,* April 2006.

Comparative Advantage

The Graphing Workshop

Recall the discussion in Chapter 2 about how you and your neighbor could increase output by specializing. The law of comparative advantage says that the individual with the lowest opportunity cost of producing a particular good should specialize in that good. Just as individuals benefit from specialization and exchange, so do businesses, states, and nations.

To reap the gains that arise from specialization, countries engage in international trade. *To maximize the benefits of trade, each country specializes in the goods that it produces at the lowest opportunity cost.* As a result, all countries can become better off than if each tried to go it alone.

world output
The combined GDP of all nations in the world

World output, the combined GDP of all nations in the world, increases when countries specialize.

How does a country decide what to produce? In other words, how does it determine its comparative advantages? Trade based on comparative advantage is usually prompted by differences in the quantity and quality of resources across countries. These resources include labor and capital, soil and seasons, and mineral deposits.

Labor and Capital

Two key resources are labor and capital. Countries differ not only in their availability of labor and capital but also in the qualities of these resources. Countries with a well-educated and well-trained labor force will specialize in producing goods that require such talent. Similarly, countries with state-of-the-art manufacturing technologies will specialize in producing goods that require high-tech capital.

Some countries, such as the United States and Japan, have an educated labor force and abundant high-tech capital. Both resources result in greater productivity per worker. This makes each nation quite competitive globally in producing goods that require skilled labor and technologically advanced capital.

Soil and Seasons

Some countries are blessed with fertile land and favorable growing seasons. The United States, for example, has been called the "bread basket of the world." The country's rich farmland is ideal for growing corn, wheat, and other grains. Honduras has the ideal climate for growing bananas. Coffee grows best in the climate and elevation of Colombia, Brazil, and Jamaica. Thus, the United States exports grain and imports coffee and bananas.

Seasonal differences across countries also create gains from trade. For example, during America's winter months, Americans buy fruit from Chile, and Canadians travel to Florida for sun and fun. During the summer months, Americans sell Chileans fruit and Americans travel to Canada for fishing and camping.

Mineral Deposits

Mineral resources often are concentrated in particular parts of the world, such as oil in Saudi Arabia, uranium in Australia, and diamonds in South Africa. The United States has abundant coal deposits but not enough oil to satisfy domestic demand. Thus, the United States exports coal and imports oil.

In summary, *countries export what they can produce at the lowest opportunity cost and import what other countries can produce at the lowest opportunity cost. As a result of this trade, all countries can produce and consume more.*

✓ CHECKPOINT

What are the sources of a country's comparative advantage?

Other Benefits of Trade

If each country had an identical stock of resources and each country combined

ETHICS IN ACTION

Should Lax Environmental Laws Create a Comparative Advantage?

When the North American Free Trade Agreement (NAFTA) was negotiated, environmental concerns were addressed by what was called the "green guardian." This phrase referred to a side deal among the signers of NAFTA—Mexico, the United States, and Canada. This accord set up a Commission for Environmental Cooperation (CEC) to help coordinate and implement policy solutions to environmental problems. Critics claim this accord actually aided polluters by sidetracking the handling of recognized environmental problems to a commission (the CEC) that lacked the powers to take effective corrective action. In a recent self-analysis report, the CEC itself concluded that the free trade allowed by NAFTA had the partial effect of allowing companies to move polluting factories to jurisdictions with less-strict anti-pollution laws. In particular, industries such as pulp and paper, mining, iron and steel production, and chemicals all found relatively safe havens in Mexico under the free-trade umbrella. Recently, however, actions taken by the CEC utilizing its fact-finding powers have helped bring controver-sial environmental issues into focus, which prompted corrective actions by the nations involved. In early 2006, for example, the CEC found that Mexican officials were not properly responding to loggers who were unlawfully clear-cutting trees in the northern part of Mexico. The publicity brought a Mexican government review and response to the problem. In another, even more significant action, the CEC in May 2006 decided to develop a "factual record" relating to widespread complaints that the U.S. Environmental Protection Agency was violating the United States' own Clean Water Act by not policing mercury discharges from its coal-fired power plants.

THINK CRITICALLY

Do you think moving plants that cause pollution to Mexico is ethical? Why or why not?

Sources: David Buente and Robert Olian, "NAFTA Complaint Challenges EPA Stances on Air Emissions and Water Discharges of Mercury," *Monday Business Briefing*, May 11, 2006; Mark Stevenson, AP, "NAFTA Panel Finds Mexico Slow to Respond to Illicit Logging," Associated Press Worldstream, January 9, 2006.

those resources with equal efficiency, then there would be no comparative advantage. Yet international trade could still benefit all participants. Here are two reasons why.

Economies of Scale

If a producer experiences *economies of scale*—that is, if the average cost of output declines as a firm expands its scale of production—countries can gain from specialization and trade. Such specialization allows firms in each nation to produce enough to enjoy economies of scale.

The **European Union**, or **EU**, consists of 25 nations joined to enhance economic cooperation. A primary reason for establishing one single market in Europe was to offer producers there a large, open market of more than 460 million consumers. European producers can increase production, experience economies of scale, and sell for less. In the process, these producers also will become more competitive trading outside of Europe.

Differences in Tastes

Even without comparative advantage or economies of scale, countries can gain from trade as long as tastes and preferences differ across countries. Consumption patterns do differ across countries, and some of these differences likely stem from differences in tastes. For example,

European Union (EU)
Twenty-five nations joined to enhance economic cooperation

the Danes eat twice as much pork as Americans do. Americans eat twice as much chicken as Hungarians do.

Soft drinks are four times more popular in the United States than in Western Europe. The English like tea. Americans like coffee. Algeria has an ideal climate for growing grapes, but its large Muslim population abstains from alcohol. Thus, Algeria exports wine.

Comparative advantage stimulates trade, but countries still may benefit from international trade even if all countries have identical resources and even if all countries produce with identical efficiency.

✓ CHECKPOINT

How could countries benefit from trade even if there is no comparative advantage?

U.S. Exports and Imports

Countries trade with one another—or, more precisely, people, firms, and governments in one country trade with those in another—because each side expects to gain from the exchange. Traders expect to increase their consumption possibilities.

U.S. Exports

Just as some states are more involved in interstate trade than others, some nations are more involved in international trade than others. For example, exports account for about one-quarter of the gross domestic product (GDP) in Canada and the United Kingdom; about one-third of the GDP in Germany, Sweden, and Switzerland; and about half of the GDP in the Netherlands. Despite the perception that Japan has a giant export sector, exports there make up only about one-seventh of GDP.

In the United States, exports of goods and services amounted to about one-tenth of GDP in 2005. Although a small fraction compared to most other countries, exports play a growing role in the U.S. economy.

The left-hand panel of Figure 18.1 shows the composition of U.S. exports by major category in 2005. Services accounted for the largest share of U.S. exports, at 30 percent of the total. Travel and tourism was the biggest service

Main Idea

Specialization and Trade

When nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase. **One of the largest categories of U.S. exports is capital goods, such as machinery used in the textile industry. One of the largest U.S. import categories is consumer goods, which includes men's suits from Italy. How do U.S. exports of textile machinery to Italy boost production and consumption of the men's suits that country produces?**





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export. Capital goods ranked a close second at 29 percent of all exports. Capital goods include high-tech products, such as computers and jet aircraft. Next most important is industrial supplies and materials, at 19 percent of the total. Together, capital goods and industrial supplies and material make up 48 percent of U.S. exports. It seems that about half of U.S. exports are used to help foreigners make things.

U.S. Imports

America is a rich country and Americans spend more on imports than foreigners spend on U.S. exports. *U.S. imports of goods and services were one-sixth the size of U.S. GDP in 2005.* The right-hand panel of Figure 18.1 shows the composition of U.S. imports. The largest category of U.S. imports is industrial supplies and material, which includes crude oil. The dollar value of this category doubled between 2002 and 2005, thanks to a spike in crude oil prices. Whereas consumer goods accounted for only 9 percent of U.S. exports, they are the second largest category of imports at 21 percent of the total. Imported consumer goods include electronics from Taiwan, shoes from Brazil, and kitchen gadgets from China.

The next most important category of imports is capital goods, at 20 percent of the total, such as printing presses from Germany.



In small groups, brainstorm examples of specific products imported from the top 10 sources of imports: Canada, Mexico, Japan, China, Great Britain, Germany, South Korea, France, Italy, and Taiwan.

To give you some feel for America's trading partners, here are the top 10 destinations in 2005 for U.S. goods in order of importance: Canada, Mexico, Japan, China, United Kingdom, Germany, South Korea, Netherlands, France, and Taiwan. The top 10 sources of U.S. imports in order of importance are Canada, China, Mexico, Japan, Germany, United Kingdom, South Korea, Taiwan, Venezuela, and France.

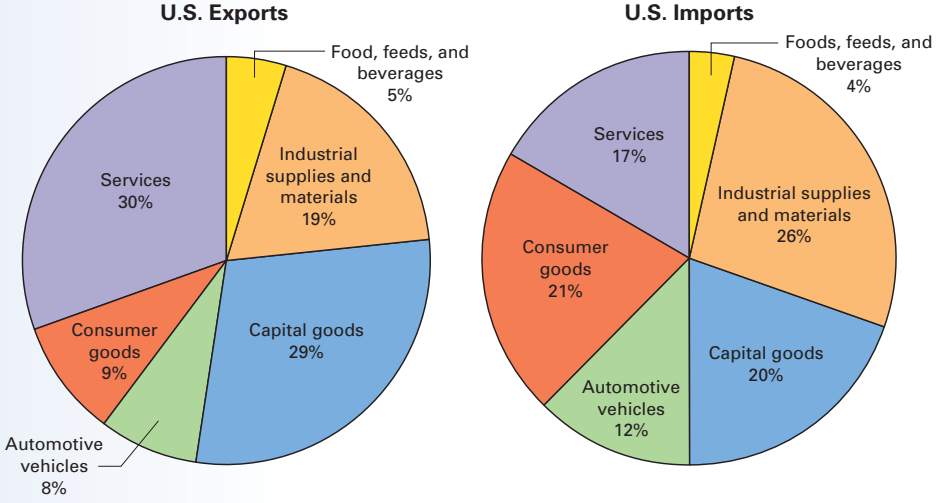
✓ CHECKPOINT

What are the most important categories of U.S. exports and imports?

Composition of U.S. Exports and Imports in 2005 — **Figure 18.1**

Services are the largest category of U.S. exports, while industrial supplies and materials, which includes oil, are the largest category of imports.

Source: Developed from export and import estimates in "U.S. International Transactions," *Survey of Current Business,* U.S. Department of Commerce, May 2006, Table E.1.



Assessment 18.1

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Key Concepts

1. Why does the United States have a comparative advantage over New Zealand in the production or lamb during April and May, while New Zealand enjoys a similar comparative advantage over the United States during the months of October and November?
2. Why wouldn't the purchase of the most advanced technology necessarily provide a nation with a comparative advantage relative to other nations?
3. In the Far East, some people think that soup made from boiled bats is a special delicacy. How does this give nations in which people who do not share this taste an export opportunity?
4. Why do wealthy nations import a larger proportion of consumer goods than nations that are not as wealthy?
5. Why doesn't it make sense for the United States to try to export coffee or bananas?

Graphing Exercise

6. One of the most important categories of goods imported into the United States is energy in the form of oil and natural gas. Use data in the table to construct a line graph that shows changes in the value of these imports from 2000 through 2004. Although the value of imported oil and gas fluctuated and finally increased by more than 75 percent over these years, the actual amounts of these products that were imported grew by only about 13 percent over these years. Explain how this was possible.

Value of Oil and Natural Gas Imports, 2000–2004

Year	Value of Oil and Natural Gas Imports (In Millions of Dollars)
2000	$ 76,166
2001	$ 72,690
2002	$ 72,930
2003	$ 101,800
2004	$ 133,606

Source: *Statistical Abstract of the United States*, 2006, p. 841.

Think Critically

7. **Biology** In recent years, many genetically engineered foods have been developed and marketed in the United States. These products include tomatoes that are firm and easy to ship, corn and wheat that resist fungus diseases, and fruit that can be stored for long periods of time without spoiling. It would be reasonable to assume that the development of these products would give the U.S. a comparative advantage over nations that do not grow genetically engineered foods. Investigate these products to see whether this assumption is accurate. What do you find? Why does a comparative advantage benefit a nation only when there is a willingness by potential customers to purchase the product?

18.2 Trade Restrictions and Free-Trade Agreements

Objectives

- Identify the two main trade restrictions and evaluate their impact on U.S. prices.
- Explain why nations seek free-trade agreements.

Overview

International trade expands the consumption possibilities of trading nations. Despite the benefits of such trade, nearly all countries at one time or another have erected trade barriers across national borders. Trade restrictions usually benefit domestic producers but harm domestic consumers. The losses to domestic consumers typically exceed the gains to domestic producers. If free trade is such a good deal, why do most countries impose trade restrictions? Producer groups are well organized and are able to encourage governments to restrict imports. Consumers are disorganized and seldom even make the connection between trade restrictions and higher prices. The good news is that trade restrictions are diminishing around the world.

Key Terms

world price

tariff

quota

General Agreement on Tariffs and Trade (GATT)

Uruguay Round

World Trade Organization (WTO)

Doha Round

In the News

Tariffs on Steel Trigger Conflict Among American Industries

In 2002, the U.S. government imposed tariffs on steel imports to reduce the impact of foreign competition on U.S. steel producers. In 20 months, approximately $650 million in higher tariffs was collected. Representatives of the U.S steel companies claimed that plant upgrades and consolidations would make the U.S. steel industry more competitive in the world market. Countering this viewpoint, two dozen members of the Automotive Coalition met with U.S. government officials to detail the damage done by the tariffs to manufacturers of automotive parts and components. Plant closings, layoffs and permanent job losses, transfers of business to overseas suppliers, and other negative effects were attributed to the tariffs. Consequently, on its behalf and the behalf of other users of steel products who were losing business and jobs, the Coalition begged the government to end the tariff. In early December 2003, the Bush administration did repeal the tariffs, arguing that they had served their purpose.

THINK ABOUT IT

When should a government impose a tariff? Is it reasonable to expect a tariff to have a totally positive or negative impact? Why or why not?

Sources: Neil King et al., "U.S. Steel Tariffs Ruled Illegal, Sparking Potential Trade War," *Wall Street Journal,* November 11, 2003; Carlos Tejeda, "After Removal of Steel Tariffs, Many Are Without Scrap Heap," *Wall Street Journal,* December 15, 2003; "Rolled Over," *Economist,* December 6, 2003.

Ask the Xpert!

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What are some arguments for restricting trade with other nations?

Trade Restrictions

For internationally traded goods, such as wheat, oil, gold, or steel, a price is established on the world market. The **world price** of any product is determined by world supply and world demand. With free trade, any U.S. consumer can buy any amount desired at the world price.

world price
The price at which a good is traded internationally; determined by the world supply and world demand for the good

Tariffs

U.S. producers would like to be able to sell their products in the United States for more than the world price. To achieve this, they often try to persuade legislators to restrict competition from abroad. One way the government can put foreign producers at a disadvantage is to impose a tariff on imports. Simply put, a **tariff** is a tax on imports. The tariff reduces the quantity of imports supplied. With fewer imports, the supply of goods in the U.S. market declines, so the price goes up. As a result, U.S. producers get to sell their products in the U.S. market for more than the world price. A tariff on U.S. imports benefits U.S. producers. However, a tariff harms U.S consumers, who must pay that higher price. The harm to U.S. consumers exceeds any possible gain to U.S. producers. The revenue from tariffs goes to the government.

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tariff
A tax on imports

Quotas

Another way domestic producers try to limit foreign competition is by getting the government to impose import quotas. A **quota** is a legal limit on the amount of a particular commodity that can be imported. Quotas usually target imports from particular countries. For example, a quota may limit the quantity of automobiles from Japan or the quantity of shoes from Brazil. *By limiting imports, a quota reduces the supply in the U.S. market, which raises the U.S. price above the world price.* Again, this helps U.S. producers but harms U.S. consumers. Foreign producers who get to sell their goods for the higher U.S. price also benefit.

Producer support for quotas, coupled with a lack of opposition from consumers (who remain mostly unaware of all this), has resulted in quotas that have lasted for decades. For example, sugar quotas have been in effect for more than 50 years.

quota
A legal limit on the quantity of a particular product that can be imported

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Tariffs and Quotas Compared

Consider the similarities and differences between a tariff and a quota. Both restrict supply, thereby increasing the price, which hurts U.S. consumers and helps U.S. producers. The primary difference is that the revenue from a tariff goes to the U.S. government, whereas the revenue from the quota goes to whoever has the right under the quota to sell foreign goods in the U.S. market. Usually the beneficiary of a quota is a foreign exporter.

Perhaps the worst part about tariffs and quotas is that foreign governments typically respond with tariffs and quotas of their own. This retaliation shrinks the U.S. export market, reducing specialization and exchange around the world.

Other Trade Restrictions

Besides tariffs and quotas, a variety of other measures restricts free trade. To promote exports, a country may provide subsidies to exporters or low-interest loans to foreign buyers. Some countries impose *domestic content requirements* specifying that at least some component of a final good must be produced domestically.

Other requirements concerning health, safety, or technical standards often discriminate against foreign goods. For example, European countries restrict meat from hormone-fed cattle, a measure aimed at U.S. beef. Food purity laws in Germany prohibit many non-German beers.

Until the European Union adopted uniform standards, differing technical requirements forced manufacturers to offer as many as seven different models of the same TV set for that market. Sometimes exporters will voluntarily limit exports, as when Japanese automakers agreed to cut exports to the United States. *The point is that tariffs and quotas are only two of many tools that restrict imports, raise prices, and reduce the benefits of specialization and comparative advantage.*

Problems with Trade Restrictions

Trade restrictions raise a number of problems. The biggest one is that other countries often respond with tariffs and quotas of their own, thus shrinking the gains from trade. This can trigger still greater trade restrictions, and lead to an outright trade war.

Second, protecting one stage of production from international competition often requires protecting other stages of production. For example, protecting the U.S. textile industry from foreign competition raises the cost of cloth to U.S. garment makers. This reduces the competitiveness of U.S. garments compared to foreign ones. As a result, the domestic garment industry might need protection as well.

Third, the cost of protection also includes spending for lobbying fees, industry propaganda, and legal actions to secure and maintain this favorable treatment from government. All these outlays are, for the most part, a social waste, for they reduce competition but produce nothing besides trade restrictions.

A fourth problem with trade restrictions is the high transaction costs of enforcing quotas, tariffs, and other restrictions. The U.S. Customs Service operates 24 hours a day, 365 days a year, inspecting the luggage of the 500 million people who enter the country each year via air, sea, and more than 300 border crossings. On highway I-35 in Laredo, Texas, for example, more than 6,000 18-wheeler trucks roll in from Mexico every day. Policing and enforcement costs add up.

Finally, research indicates that trade barriers slow the introduction of new goods and better technologies. So, rather than simply raising domestic prices and reducing the gains from specialization, trade restrictions also slow economic progress.

✓CHECKPOINT

What are the two main trade restrictions and how do they affect U.S. prices?

Free Trade by Multilateral Agreement

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International trade arises from voluntary exchange among buyers and sellers pursuing their self-interest. Since 1950, world output has risen seven-fold, but world trade has increased seventeen-fold. World trade offers many advantages to the trading countries. These include increased consumption possibilities, access to markets around the world, lower costs through economies of scale, improved quality from competitive pressure, and lower prices. Because of these advantages, the trend around the world is towards freer trade. One way to ensure freer trade is for nations to enter multilateral trade agreements. These are agreements entered into by more than two nations.

General Agreement on Tariffs and Trade (GATT)

Trade restrictions introduced during the Great Depression contributed to that economic disaster. To avoid a return to such dark times, after World War II the United States invited its trading partners to negotiate lower tariffs and quotas. The result was the **General Agreement on Tariffs and Trade (GATT)**, an international trade agreement adopted in 1947 by the United States and 22 other countries. Each signer of GATT agreed to reduce tariffs through multinational negotiations; reduce quotas; and treat all member nations equally with respect to trade.

General Agreement on Tariffs and Trade (GATT)

An international tariff-reduction treaty adopted in 1947 that resulted in a series of negotiated "rounds" aimed at freer trade

Since then, a series of trade negotiations among many countries, called *trade rounds,* has continued to lower trade barriers. Trade rounds offer a package approach to trade negotiations rather than an issue-by-issue approach. A particular industry might object less to freer trade when it sees that other industries also agree to freer trade.

The most recent round of negotiations was completed in Uruguay in 1994. More than 140 countries signed this agreement, called the **Uruguay Round**. This was the most comprehensive of the eight postwar multilateral

Uruguay Round

The most recently completed and most comprehensive of the eight postwar multilateral trade negotiations under GATT; created the World Trade Organization

World Trade Organization (WTO)

The legal and institutional foundation of the multilateral trading system that succeeded GATT in 1995

Doha Round

The first WTO negotiations aims to help developing countries by reducing barriers that harm their exports

trade rounds. The Uruguay Round phased in tariff reductions on 85 percent of world trade and will eventually eliminate quotas.

Figure 18.2 shows tariff revenue as a percentage of the value of imported goods since 1821. You can see that tariffs have varied widely. Note that during the Great Depression of the 1930s, tariffs spiked. These high tariffs contributed to the global economic troubles of that period. Thanks to trade agreements, average tariffs are lower now than at any time in U.S. history. The Uruguay Round lowered the average tariff from 6 percent to 4 percent of import prices.

NET Bookmark

The WTO's web site describes its role and functions and explains the benefits of reducing trade barriers. Access the site through thomsonedu.com/school/econxtra and choose a topic that interests you. Prepare a two-minute oral presentation explaining the topic you chose.

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World Trade Organization

The Uruguay Round also created the World Trade Organization (WTO) as the successor to GATT. The **World Trade Organization (WTO)** now provides the legal and institutional foundation for world trade. Whereas GATT was a multilateral agreement with no staff or permanent location, the WTO is a permanent institution in Geneva, Switzerland, staffed mostly by economists. Whereas GATT involved only merchandise trade, the WTO also deals with services and trade-related aspects of intellectual property, such as books, movies, and computer programs. The first round of WTO negotiations began in Doha, Qatar, in November 2001. The objective of the so-called **Doha Round** is to make trade fairer to developing countries by reducing barriers that harm their exports, especially agricultural products.

Common Markets

Some countries have looked to the success of the U.S. economy, which is essentially a free-trade zone across 50

U.S. Tariff Revenue as a Percentage of Merchandise Imports Since 1821 — **Figure 18.2**

Over the years, tariffs have been up and down, spiking during the Great Depression. Overall, however, the trend has been toward lower tariffs.

Source: 1821–1970: U.S. Dept. of Commerce, Bureau of Census, *Historical Statistics of the United States,* Part 2, 1976, and *Economic Report of the President,* February 2006, Table B-81.



states, and have tried to develop free-trade zones of their own. The largest and best known is the European Union, which began in 1958 with six countries and has expanded to 25. The idea was to create a barrier-free European market in which goods, services, people, and capital flow freely to their highest-valued use. Twelve of the 25 members of the European Union have also adopted a common currency, the *euro*, which replaced national currencies in 2002.

The United States, Canada, and Mexico also have developed a free-trade pact called the North American Free Trade Agreement (NAFTA). Around the world, the trend is toward free-trade agreements.

✓CHECKPOINT

Why have nations signed free-trade agreements?

Span the Globe

Proposal to Create World's Largest Free-Trade Area Under Attack

The North American Free Trade Agreement (NAFTA) was signed and put into effect by Mexico, Canada, and the United States in 1994 in order to lower tariffs and boost economic prosperity in those three nations. In November 2003, the leaders of the 34 democracies of the Western Hemisphere met in Miami, Florida, to work out the details of a new trade agreement called the Free Trade Area of the Americas (FTAA). The FTAA would create the world's largest free-trade area —a tariff-free trade zone stretching from Canada to the tip of South America. The FTAA area would include some 800 million consumers and nations with a combined gross domestic product of some $18 trillion. The FTAA is touted by most of the nations involved in the negotiations as the logical successor to NAFTA, and it has many supporters. However, some governments and anti-globalization groups from the countries involved oppose the creation of this free-trade area. Brazil, for example, is reluctant to enter the agreement due to issues involving import quotas, tariffs, and agricultural subsidies. Joining Brazil in its opposition are Venezuela and the southern common market countries of Argentina, Paraguay, and Uruguay. In addition, groups representing U.S. workers also oppose the free-trade area. American labor organizations blame NAFTA for hundreds of thousands of lost manufacturing jobs. These groups are concerned that an FTAA agreement would only increase this job loss. Manufacturers, on the other hand, argue that to survive they must be able to reduce labor costs. Because of this dissent, the Bush Administration in late 2005 failed to get a unanimous commitment from the countries involved to rejuvenate the stalled FTAA negotiations.

THINK CRITICALLY

What advantage is there in having a free-trade area such as FTAA? What are the disadvantages?

Sources: "Florida FTAA Hosts His Excellency Luis Alberto Castiglioni, Vice President of Paraguay," PR Newswire US, March 21, 2006; Laura Carlsen, "Timely Demise for Free Trade Area of the Americas," *La Prensa San Diego,* December 2, 2005.

Assessment 18.2

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Key Concepts

1. Why do many fruit farmers in the United States think tariffs should be placed on fruit imported from South America and China? Whom would such tariffs benefit, and whom would they harm?
2. If a quota was placed on the number of automobiles that could be imported into the United States, how would U.S. consumers be affected?
3. Many nations require imported car models to be crash-tested before they can be marketed to consumers. They refuse to accept the results of crash tests performed in other countries. This process is expensive for firms involved in trade. How is such a requirement a barrier to trade? How are consumers in these nations affected by such laws?
4. Why have some less-developed nations argued that they have been discriminated against by first GATT and then the WTO rules that discourage tariffs and quotas?
5. What problems and benefits that might result from the creation of a free-trade organization can be seen within the U.S. economy?

Graphing Exercise

6. Nations are most likely to impose either tariffs or quotas on trade for products for which they do not have a comparative advantage. Study the data in the table, and use it to construct a double bar graph that shows the value of U.S. imports and exports for these classifications of goods in 2004. In which types of production would there have been the greatest pressure from U.S. businesses and labor organizations for the imposition of either tariffs or quotas? Explain your answer.

U.S. Exports and Imports of Selected Commodity Groups, 2004 (in millions of dollars)

Commodity Group	Exports	Imports
1. Soybeans	$ 6,685	$ 53
2. Fruits and Vegetables	$ 8,848	$12,804
3. Airplanes	$24,945	$11,647
4. Footwear	$ 450	$16,505
5. Scientific Instruments	$32,912	$28,459

Source: *Statistical Abstract of the United States*, 2006, p. 839.

Think Critically

7. **Government** The creation of a free-trade organization requires a formal international treaty. Approval of such treaties often involves political issues that go beyond economic considerations. The treaty that created the European Union, for example, was debated by governments in Europe for many years. Some nations, such as Norway and Switzerland, chose not to join the organization. What possible reasons could these nations have had for their choice? Why might they change their decision in the future?

movers & shakers

Nandan Nilekani *Chief Executive Officer, President, and Managing Director of Infosys Technologies Ltd.*

Seattle, Washington, has Bill Gates. Bangalore, India, has Nandan Nilekani. That's how *New York Times* columnist Thomas Friedman described the impact that Nilekani has had on India and the entire world.

As CEO, president, and managing director of Infosys Technologies Ltd., "Nilekani has a unique ability not simply to program software, but also to explain how that program fits into the emerging trends in computing, how those trends will transform the computing business, and how that transformation will affect global politics and economics," Friedman writes. He adds that Nilekani is "a great explainer."



DIBYANGSHU SARKAR/AFP/GETTY IMAGES

Infosys offers low-cost information technology, software, and consulting services to companies around the world. Founded in 1981 by seven software professionals including Nilekani, the company employed 53,000 in 2006 and had revenues that year exceeding $2 billion. Headquartered in Bangalore, India, Infosys operates eight development centers in India, and more than 30 offices in 20 other countries. Although much of the company's business comes from U.S. firms, most employees work outside the United States. The company regularly recruits top graduates from U.S. colleges, moving them to India for training and often for permanent employment there.

Nilekani was asked if he thought Infosys was taking away American jobs. He replied, "At the end of the day, what we are doing is helping American business to become more productive. Productivity is the name of the game. It's why the United States is so successful, why the standard of living is so high, and why the economy does so well. It's because there is continued focus on productivity." He added, "It's a win-win for everybody." Nikelani in 2006 was named one of *Time* magazine's 100 most influential people in the world. With a net wealth of $740 million, he donated $22 million in 2006 to a charity founded by his wife that helps provide clean water to the poor. "My objective in life is to be an object of change," he told a reporter. He proves it by chairing an organization dedicated to making Bangalore a better city. He also works on various projects aimed at improving other cities in India.

SOURCE READING

Many advocates of U.S. technology are not happy with the outsourcing of U.S. workers to Infosys locations in India and other parts of the world. Yet Nilekani calls it a "win-win." Do you agree with Nilekani that Infosys' outsourcing is good for the United States and for other parts of the world?

ENTREPRENEURS IN ACTION

Many wealthy entrepreneurs, such as Nilekani, use their wealth to establish foundations that help others. Do you think it is their duty to do so? If you had a net worth of $740 million, would you donate a significant amount of it to help others? Why or why not?

Sources: http://money.cnn.com/2006/03/15/magazines/fortune/infosys_fortune_032006/; article in the San Francisco Chronicle: www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/07/04/BUG297EHSR1.DTL&type=business; article on CNET News titled "Newsmaker, on the outsourcing hotseat" at http://news.com.com/On+the+outsourcing+hot+seat/200 8-1022_3-5142597.html; *Time*, May 2006, posted on the web April 30, 2006: "100 Most Influential People in the World in 2006"; www.infosys.com.

Sharpen Your Skills



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Critical Thinking

Some Americans think it is a wise and patriotic choice to pay higher prices to buy goods and services manufactured in the United States rather than to purchase similar products that have been imported from foreign countries. They point out that money spent on imported products deprive U.S. workers of employment and U.S. firms of profits.

Other Americans argue that consumers should look only for the best price and highest quality in the products they buy, regardless of where they were produced. They argue that paying more to buy American-made goods and services allows inefficient firms to stay in business and use scarce resources in ways that do not take advantage of our nation's comparative advantage.

Which of these two points of view seems more logical to you? Is it always possible to make choices that clearly support one side or the other? Use your critical thinking skills to evaluate each of the following situations and decide what you would do in each case. Explain your choice, and describe how it is consistent with the point of view you think is most logical.

Apply Your Skill

1. In 2006, more than 90 percent of athletic shoes (tennis, running, basketball, etc.) sold in the United States were imported from other countries. The relatively few athletic shoes produced in this country most often were designed for special uses and were more expensive than similar imported footwear. Suppose you needed a new pair of athletic shoes for a school team you joined. You could buy an imported pair for $50 or a similar pair made in the United States for $100. Which pair of shoes would you purchase?
2. In 2006, advancements in communications technology made it possible for U.S. manufacturers to provide "help lines" and technical support to their customers from people located in almost any nation of the world. When U.S. consumers called the toll-free number to ask for assistance in operating their new appliance, they were likely to end up talking with a person located in India or Pakistan. These workers were paid much less than workers in the United States. Would you try to avoid purchasing products from firms that outsourced their consumer support services to other nations? Why or why not?
3. In 2006, more than 60 percent of the petroleum consumed in the United States was imported from other nations. Some consumers chose to conserve gasoline by purchasing hybrid automobiles imported from Japan that were powered by both electric motors and gasoline engines. These vehicles could go 50 miles or more on each gallon of gasoline. Would you buy this type of vehicle if you were ready to purchase an automobile? Why or why not?

18.3 Balance of Payments

Objectives

- Describe the components of a nation's current account.
- Describe the components of a nation's financial account.

Overview

Money doesn't grow on trees. In the course of a week, a month, or a year, the amount you spend, save, and give away must equal the amount you earn, borrow, or are given. You, like everyone else in the world, face a budget constraint. Your outflow of money cannot exceed your inflow. Just as you must make ends meet, so too must families, businesses, governments, and even countries. For example, the flow of receipts into the United States from the rest of the world must equal the outflow of payments to the rest of the world. There's no getting around it.

Key Terms

balance of payments

current account

merchandise trade balance

trade surplus

trade deficit

financial account

In the News

U.S. Trade Deficit with China

For the United States, the rise of the Chinese economy has meant cheaper consumer goods as well as greater investment opportunities for American companies. Much U.S. financial capital goes into Chinese companies that export their goods back to the United States. What has resulted is a trade deficit with China. Today it is popular with politicians and editorial writers to complain about the rising trade imbalance. Accusations that China artificially keeps its currency low in relation to the U.S. dollar to help China's exports are a continuing debate. Still some economists see the trade deficit with China as somewhat misleading. They note that while China runs a trade surplus with the United States, it runs a deficit with the rest of Asia. Asian companies outside of China that once exported directly to the United States now are sending the products to China for assembly. These products, which are being exported to the United States and credited as "Chinese" exports, make up half of Chinese exports to the United States. Exports are the engine of the Chinese economy, making up about 40 percent of GDP. Nonetheless, China is not immune from foreign competition. Some manufacturers are shifting production from China to countries where costs are even lower, such as Vietnam and Cambodia.

THINK ABOUT IT

Does it matter that some of the imports to the United States now come from China rather than from other Asian countries?

Source: "The Long China View," *Wall Street Journal,* April 20, 2006.

balance of payments
A record of all economic transactions between residents of one country and residents of the rest of the world during a given period

trade surplus
The amount by which the value of merchandise exports exceeds the value of merchandise imports during a given period

trade deficit
The amount by which the value of merchandise imports exceeds the value of merchandise exports during a given period

current account
That portion of the balance of payments that records exports and imports of goods and services, net investment income, and net transfers

merchandise trade balance
The value of a country's exported goods minus the value of its imported goods during a given period

Current Account

The U.S. **balance of payments** is the record of all economic transactions between U.S. residents and residents of the rest of the world. Because it reflects all the transactions that occur during a particular period, usually a year, the balance of payments is a *flow* measure. Balance-of-payments accounts are maintained according to the principles of *double-entry bookkeeping,* in which entries on one side of the ledger are called *credits*, and entries on the other side are called *debits*. Because total credits must equal total debits, there must be a *balance* of payments when all the separate accounts are added together.

The balance of payments is divided into two broad accounts: the current account and the financial account. The **current account** keeps track of trade in goods and services, the flow of interest and profits across international borders, and the flow of foreign aid and cash gifts. The most important of these is the trade in goods, also called *merchandise trade.*

The Merchandise Trade Balance

The **merchandise trade balance** equals the value of merchandise exports minus the value of merchandise imports. Merchandise trade reflects trade in goods, or tangible products, such as Irish sweaters and U.S. computers. The merchandise trade balance usually is referred to in the media as simply the *trade balance.* Global merchandise international trade exceeded $10 trillion in 2005.

The value of U.S. merchandise exports is listed as a credit in the U.S. balance-of-payments account because U.S. residents must *be paid* for the exported goods. The value of U.S. merchandise imports is listed as a debit in the balance-of-payments account because U.S. residents must *pay* foreigners for imported goods.

If the value of merchandise exports exceeds the value of merchandise imports, there is a *surplus* in the merchandise trade balance, or a **trade surplus**. If the value of merchandise imports exceeds the value of merchandise exports, there is a *deficit* in the merchandise trade balance, or a **trade deficit**. The merchandise trade balance, which is reported monthly, influences the stock market, currency exchange rates, and other financial markets.

The trade balance depends on a variety of factors, including the strength and competitiveness of the U.S. economy compared with other economies, the value of the dollar compared with other currencies, and the economic vitality of the U.S. economy. The U.S. merchandise trade balance since 1960 is depicted in Figure 18.3, where exports (the blue line) and imports (the red line) are expressed as a percentage of GDP. In the 1960s, exports exceeded imports, so the United States experienced trade surpluses, shaded in blue. Since 1976, imports have exceeded exports every year, resulting in trade deficits, shaded in pink. Trade deficits as a percentage of GDP have increased steadily in recent years, growing from 1.3 percent in 1991 to a record 6.2 percent in 2005, when the U.S. trade deficit reached $781.6 billion.

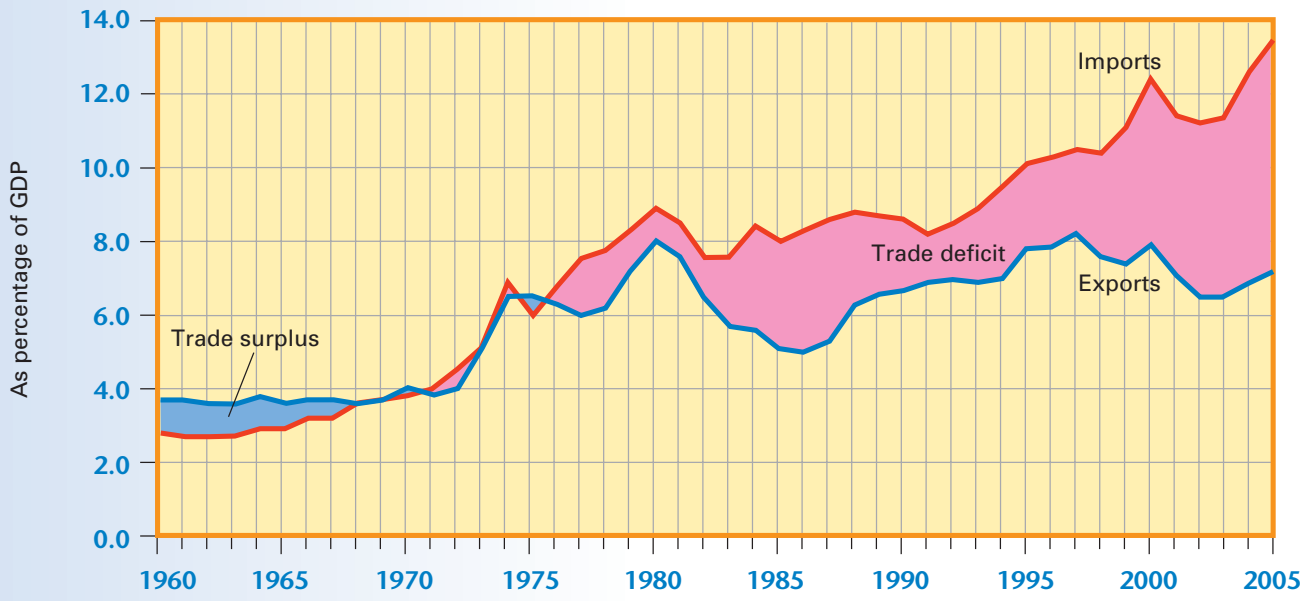
The United States imports more from each of the world's major economies than it exports to them. Figure 18.4 shows the U.S. trade deficit with major economies or regions of the world in 2005. The $202 billion trade deficit with China was by far the largest. China bought $42 billion in U.S. goods, but Americans bought $244 billion in Chinese goods, including $136 billion in nonfood consumer goods. Chances are, most of the utensils in your kitchen were made in China.

NET Bookmark

Access the Bureau of Economic Analysis data reports on U.S. international accounts through thomsonedu.com/school/econxtra. Click on "Current releases" under "News" in the left column. Then click on one of the articles under "International." Write a paragraph summarizing the information in the release.

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U.S. Merchandise Imports and Exports Relative to GDP Since 1960 **Figure 18.3**



U.S. imports of goods have exceeded U.S. exports of goods since 1976, and the trade deficit has widened.

Source: Developed from merchandise trade data in the *Economic Report of the President,* February 2006, and the U.S. Bureau of Economic Analysis. Imports and exports are shown relative to GDP.

The Balance on Goods and Services

The merchandise trade balance focuses on the flow of goods, but some services also are traded internationally. *Services* are intangible products, such as transportation, insurance, banking, consulting, and tourism.

The value of U.S. service exports, such as when an Italian tourist visits Chicago, is a credit in the U.S. balance-of-payments account because U.S. residents receive payments for these services. The value of U.S. service imports, such as when a computer specialist in India enters data for a Connecticut insurance company, is a debit in the balance-of-payments account because U.S. residents must pay for the imported services. Because the United States exports more services than it imports, the balance on services has been in surplus for the last three decades.

The *balance on goods and services* is the value of exports of goods and services minus the value of imports of goods and services. Because the service account has been in surplus, the balance on goods and services has not been as negative as the merchandise trade balance.

Investigate Your Local ECONOMY

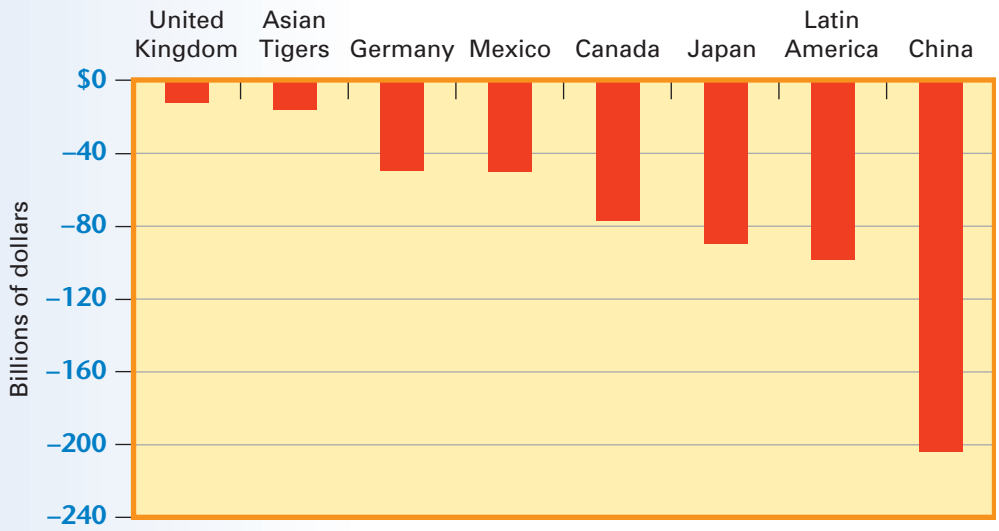
Research to find an example of a good or service produced in your local economy that is exported. If possible, find out the annual dollar value of the exported good or service. Share your results in class.

Unilateral Transfers

Unilateral transfers consist of government transfers to foreign residents, foreign aid, personal gifts to friends and relatives abroad, personal and institutional charitable donations, and other transfers. Money sent abroad by a U.S. resident to friends or relatives would be included in U.S. unilateral transfers and

U.S. Trade Deficit in 2005 by Country or Region

Figure 18.4

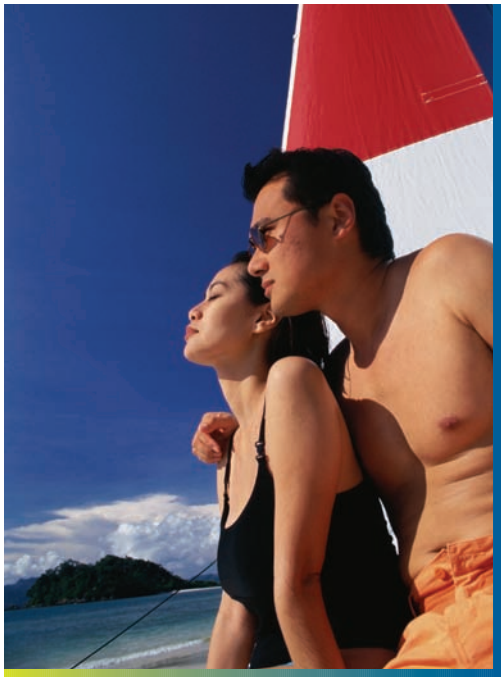


The United States has a trade deficit with each of the world's major economies because it imports more goods from them than it exports to them.

Source: U.S. Department of Commerce, *Survey of Current Business,* April 2006, Table J. The so-called Asian Tigers are Hong Kong, South Korea, Singapore, and Taiwan.

would be a debit in the balance-of-payments account. For example, immigrants to the United States often send money to families back home.

Net unilateral transfers equal the unilateral transfers received from abroad by U.S. residents minus unilateral transfers sent to foreign residents by U.S. residents. U.S. net unilateral transfers have been negative each year since World War II, except for 1991, when the U.S. government received sizable transfers from foreign governments to help pay their share of the Persian Gulf War. In 2005, the U.S. net unilateral transfer was a negative $83 billion. To give you some feel for that amount, the net transfer abroad averaged about $720 for each U.S. household. These transfers represent an important source of spending power for many poor countries. The president of Mexico recently said that the $40 billion sent by Mexican workers in the United States to families back home is Mexico's major source of foreign exchange.



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When Asian tourists visit U.S. beaches, is the money they spend considered a debit or a credit in the U.S. balance-of-payments account? Explain your answer.

When net unilateral transfers are combined with the balance on goods and services, the result is the *current account balance,* a figure reported quarterly by the federal government. *The current account includes all international transactions in currently produced goods and services, flows of interest and profit, plus unilateral transfers. It can be negative, reflecting a current account deficit; positive, reflecting a current account surplus; or zero.*

✓ CHECKPOINT

What is included in a nation's current account?

e-conomics

U.S. FOREIGN AID ACCOUNTABILITY

Foreign aid, the unilateral transfer payments by the United States to other countries that are intended to raise living standards and spur economic development, has gone through many changes over the years. The progression began with the post-World War II Marshall Plan, generally credited with helping to rebuild a Europe devastated by conflict. It then moved through the Alliance for Progress, aimed at increasing the standard of living in Latin America in the 1960s. Foreign aid during the 1980s was aimed at supporting governments in Latin America threatened by revolutionary movements. The George W. Bush administration planned to increase foreign aid by half again, to help countries that are "ruling justly, investing in their people, and establishing economic freedom." Through it all, however, the actual good done by aid programs has been difficult to evaluate, due to the sheer size of the amounts paid out in these programs and the political motives behind them. This may be changing, however. In an initiative referred to as the Millennium Challenge Account (MCA), the U. S. government offered several billion dollars to countries that promise to be accountable for how the funds are spent. To be eligible for the aid, a nation must be highly rated in its efforts at "ruling justly, investing in people, and encouraging economic freedom." By 2004, two years after the program was announced, 16 countries were certified by the government as eligible. By 2006 over $1.5 billion had been provided under the program to deserving countries such as Madagascar, Cape Verde, Honduras, Nicaragua, Georgia, Benin, Vanatu, and Armenia. In addition, a Threshold Program had been created as part of the MCA. This program is dedicated to assisting nations working to become eligible for an MCA grant, primarily by rooting out corruption in their governments. Because of its success, President Bush planned to ask for an additional $3 billion for the program in the 2007 budget.

THINK CRITICALLY

Do you think the Threshold Program is a good idea? Why or why not? Can you think of better uses for the billions invested in the Millennium Challenge Accounts?

Sources: "Change in Foreign Aid Prompts Accountability," *San Antonio Express-News,* May 18, 2004; "U.S. Paraguay Sign Foreign Aid Compact," States News Service, May 9, 2006; and www.whitehouse.gov/infocus/developingnations/millennium.html.

Financial Account

The United States has been running a current account deficit for years. How can it pay for all the imports and all the transfers? The United States gets the money from selling financial assets, such as stocks and bonds, and from selling real assets such as land, housing, factories, and other property. When the current account comes up short, asset sales make up the difference.

The **financial account** tracks the flow of financial capital by recording international transactions involving financial and real assets. For example, if U.S. residents buy foreign assets, money flows from the United States to pay for these assets. Money flows into the United States when foreigners buy U.S. assets, such as U.S. stocks and bonds, an office building in New York City, or a ski chalet in Colorado. The financial account deals with buying and selling assets across international borders.

financial account
That portion of the balance of payments that records international transactions involving financial assets, such as stocks and bonds, and real assets, such as factories and office buildings

Record of the Financial Account

Between 1917 and 1982, the United States ran a deficit in the financial account, meaning that U.S. residents purchased more foreign assets than foreigners purchased assets in the United States. Since 1983, however, the financial account has been in surplus nearly every year. This means foreigners have been buying more U.S. assets than Americans have been buying foreign assets. Foreign purchases of assets in the United States contribute to America's productive capacity and promote employment. However, the return on these investments flows to foreigners, not to Americans.

Statistical Discrepancy

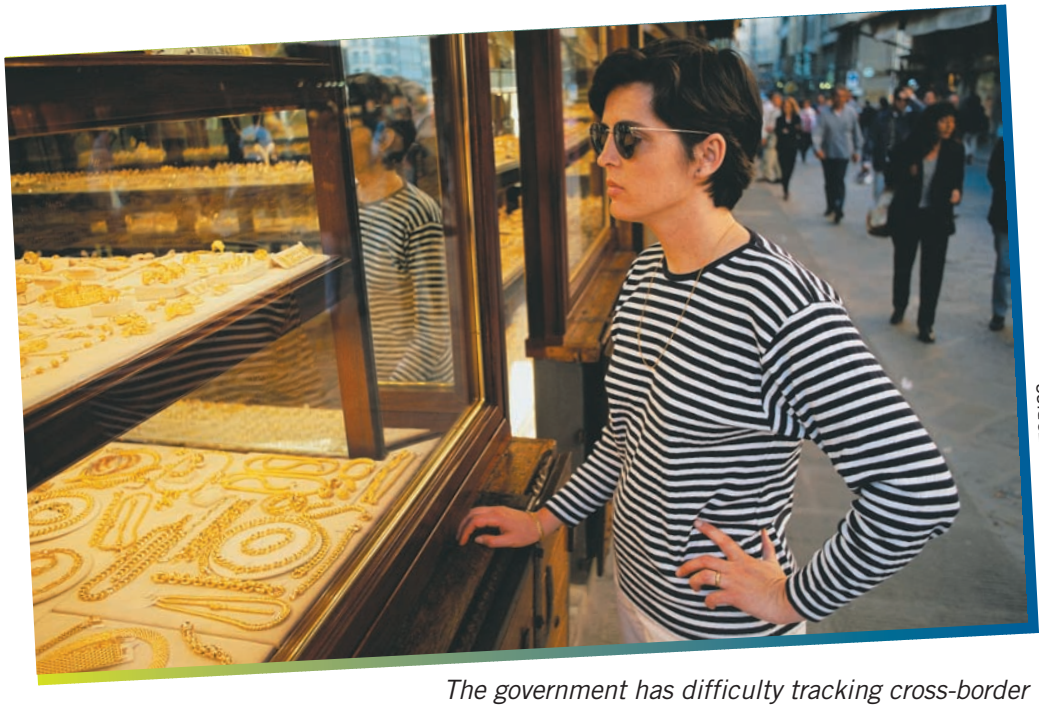
Again, the U.S. balance of payments records all transactions between U.S. residents and foreign residents during a specified period. It is easier to describe the balance of payments than to compile it. Despite efforts to capture all international transactions, some are nearly impossible to trace. For example, the government can't easily monitor spending by an American tourist in Europe or illegal drug trafficking. But as the name *balance of payments* suggests, the entire balance-of-payments account must by definition be in balance—debits must equal credits.

To ensure that the two sides balance, the *statistical discrepancy* was created. An excess of credits in all other accounts is offset by an equivalent debit in the statistical discrepancy, or an excess of debits in all other accounts is offset by an equivalent credit in the statistical discrepancy.

You might think of the statistical discrepancy as the official "fudge factor." The statistical discrepancy provides analysts with both a measure of the error in the balance-of-payments data and a means of satisfying the double-entry bookkeeping requirement that total debits equal total credits. In 2005, the current account and the financial account combined for a deficit of $9.6 billion. To offset that deficit, the statistical discrepancy added $9.6 billion back into the balance. Thus, the balance of payments for all accounts, including the statistical discrepancy, sums to zero.

✓ CHECKPOINT

What is included in a nation's financial account?



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The government has difficulty tracking cross-border transactions, such as when an American visiting Italy purchases gold jewelry. How does the government try to make up for any errors in estimating such purchases?

Assessment 18.3

Key Concepts

1. A large part of the U.S. national debt is owned by people who live in other nations. How is the U.S. current account affected by interest payments made by the federal government on its debt?
2. Would the merchandise trade balance be affected by millions of people in foreign nations choosing to pay to see a recent Hollywood action movie? Why or why not? If not, what measure of trade would this affect?
3. Why must the total value of all nations' trade surpluses and deficits be balanced?
4. If you received a gift of 100 euros from a relative who lives in Germany, how would this gift affect the U.S. balance of payments?
5. Suppose the value of stocks in the United States increased, causing many foreigners to sell their U.S. stock to earn a profit. They then have their funds sent to them in their own nations. What would this do to the U.S. financial account?

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Graphing Exercise

6. When foreigners purchase or build businesses in the United States, their payments for these investments flow into this country. Construct a line graph from the data in the table that shows the growth in foreign investment in U.S. businesses from 2000 through 2004. What does your graph tell you about this investment? How would this investment affect the U.S. economy?

Value of U.S. Businesses Acquired or Established by Foreign Investors, 2000–2004 (Values in millions of dollars)

2000	$335,629
2001	$147,109
2002	$ 54,419
2003	$ 63,591
2004	$ 79,920

Source: *Statistical Abstract of the United States*, 2006, p. 826.

Think Critically

7. **Accounting** Keeping track of a nation's balance of payments is a major accounting problem that is never totally accurate. Determine whether each of the following would be a credit or a debit for America's balance of payments and how each would affect the nation's economy. Why is it difficult for government officials to keep track of some of these flows of value?
   - There is a $500 million increase in the nation's exports of computers.
   - U.S. residents send $30 million more to their relatives in other countries.
   - Foreigners invest an additional $450 million in U.S. businesses.
   - There is an $800 million increase in the nation's imports of automobiles.
   - Americans spend $40 million more on foreign travel.
   - Businesses in the nation pay $25 million more in dividends to foreigners.

18.4 Foreign Exchange Rates

Objectives

- Analyze what determines the exchange rate between the dollar and the euro.
- Identify the participants in the market for foreign exchange.
- Distinguish between flexible and fixed exchange rates.

Overview

Now that you have some idea about international trade and the balance of payments, you can take a closer look at the forces that determine the rate of exchange between the U.S. dollar and other currencies. When Americans buy foreign goods or travel abroad, these transactions involve two currencies—the U.S. dollar and the foreign currency. What is the dollar cost of a peso, a yen, a pound, or a euro? As you will see, the exchange rates between the dollar and other currencies usually are determined just like other prices—by the forces of supply and demand.

Key Terms

foreign exchange

exchange rate

flexible exchange rates

fixed exchange rates

In the News

China Pressured to Let Yuan Find Market Exchange Rate

After joining the World Trade Organization (WTO) in 2001, China dismantled some of its trade barriers. Still the U.S. trade deficit with China exceeded $200 billion by 2005, more than double the 2001 trade deficit. U.S. trade officials believe China can and should do more. The United States wants China to allow its currency to rise in value in order to reduce the advantage China has over U.S. manufacturers. Some economists estimate that China's currency is 40 percent lower than what market forces would indicate. This makes U.S. products more expensive in China and Chinese products cheaper in the United States. So Americans buy more Chinese products and Chinese consumers buy fewer U.S. products. Recently China has allowed limited floating of its currency (about 2 percent) with promises to do more. Another approach U.S. trade officials have taken is to appeal to the International Monetary Fund. If a country's currency exchange policies appear to be an attempt to give that country an unfair competitive advantage, the IMF could act to convince the country to change its practices.

THINK ABOUT IT

If the exchange rate of the Chinese yuan is allowed to rise against the U.S. dollar, how will that affect the balance of trade between the two countries?

Sources: Paul Blustein, "Fighting Words Belie Trade Reality; U.S. Makes Demands on China but Lacks Power to Force Change," *Washington Post,* April 18, 2006; "China's Responsibilities," *Washington Post,* February 15, 2006.

The Market for Foreign Exchange

Foreign exchange is foreign money people need to carry out international transactions. Typically, foreign exchange is made up of bank deposits in the foreign currency. When foreign travel is involved, foreign exchange may consist of foreign paper money. The **exchange rate** is the dollar price of purchasing a unit of another currency. The exchange rate, or price of another currency, is determined by the interaction of all those who buy and sell foreign exchange. The exchange rate between two currencies is set through the interaction of demand and supply for these currencies.

The Euro

The foreign exchange market involves all the arrangements used to carry out international transactions. This market is not so much a physical place as it is a network of telephones and computers connecting large financial institutions worldwide. The foreign exchange market is like an all-night diner—it never closes. A trading center is always open somewhere in the world.

Consider the market for a particular foreign currency, the euro. For decades the nations of Western Europe have tried to increase their economic cooperation and trade. These countries believed they would be more productive and more competitive with the United States if they acted more like the 50 United States and less like separate economies, each with its own trade regulations, trade barriers, and currency. Imagine the hassle involved if each of the 50 states had its own currency, which you had to exchange every time you wanted to buy something in another state.

In January 2002, *euro* notes and coins entered circulation in the 12 European countries that adopted the new common currency. The euro is now the common currency in the *euro area,* as the dozen countries are now called. The price, or exchange rate, of the euro is the dollar price of one euro. The

foreign exchange
Foreign money needed to carry out international transactions

exchange rate
The price measured in one country's currency of purchasing one unit of another country's currency



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Why do you think adoption of the euro as a common currency in Europe has increased trade among the 12 countries in the euro area?

exchange rate, like any other price, is determined using supply and demand. *The equilibrium price of foreign exchange is the one that equates quantity demanded with quantity supplied.*

Demand for Foreign Exchange

U.S. residents need euros to pay for goods and services from the euro area, to buy assets from there, to make loans to the euro area, or simply to send cash to friends or relatives there. Whenever U.S. residents need euros, they must buy them in the foreign exchange market, which could be as near as the local bank.

Figure 18.5 depicts a market for foreign exchange—in this case, euros. The horizontal axis shows the quantity of foreign exchange, measured here in millions of euros per day. The vertical axis indicates the dollar price of one euro. The demand curve *D* for foreign exchange shows the relationship between the dollar price of the euro and the quantity of euros demanded, other things assumed constant. Some of the factors assumed constant along the demand curve are the incomes and preferences of U.S. consumers, the expected inflation rates in the United States and in the euro area, and interest rates in the United States and in the euro area.

People have many reasons for demanding foreign exchange; but in the aggregate, the lower the dollar price of foreign exchange, the greater the quantity of foreign exchange demanded. The cheaper it is to buy euros, the lower the dollar price of euro area products, so the greater the quantity of euros demanded by U.S. residents. For example, a cheap-enough euro might persuade you to tour Rome, climb the Austrian Alps, or wander the museums of Paris.

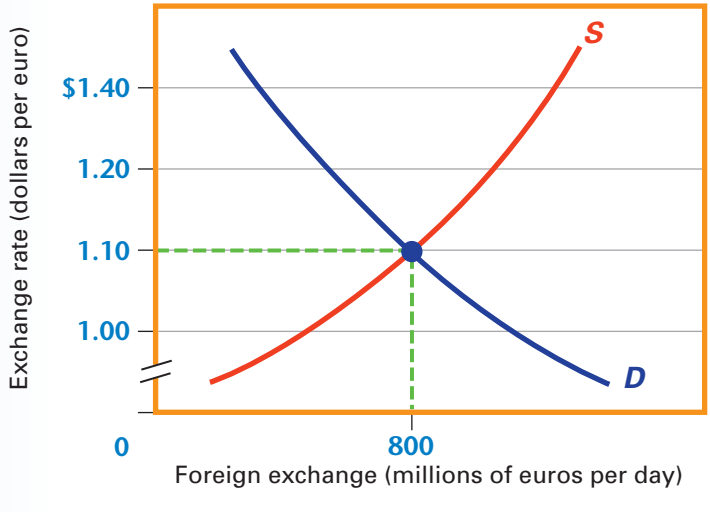
Supply of Foreign Exchange

The supply of foreign exchange is generated by the desire of foreign residents to acquire dollars—that is, to exchange euros for dollars. Residents of the euro area want dollars to buy U.S. goods and services, to buy U.S. assets, to make loans in dollars, or to make cash gifts in dollars to their U.S. friends and relatives. Europeans supply euros in the foreign exchange market to acquire the dollars they need.

An increase in the dollar-per-euro exchange rate, other things constant, makes U.S. products cheaper for

The Foreign Exchange Market for Euros — **Figure 18.5**

The fewer dollars needed to purchase one euro, the lower the price of European goods and the greater the quantity of euros demanded. The demand curve for euros slopes downward. An increase in the dollar cost of a euro makes U.S. products cheaper for Europeans. Their increased demand for U.S. goods increases the quantity of euros supplied. The supply curve of euros slopes upward. The intersection of demand and supply curves determines the market exchange rate, measured here in dollars per euro.



foreigners. More euros will be supplied on the foreign exchange market to buy dollars. Figure 18.5 shows the upward-sloping supply curve for foreign exchange (again, euros in this example).

The supply curve is drawn assuming other things remain constant. These include the euro area's incomes and preferences, inflation expectations in the euro area and in the United States, and interest rates in the euro area and in the United States.

Determining the Exchange Rate

Figure 18.5 brings together the supply and demand for foreign exchange to determine the exchange rate. At a rate of $1.10 per euro, the quantity of euros demanded equals the quantity supplied—in this example, 800 million euros per day.

What if this equilibrium exchange rate is upset by a change in one of the underlying forces that affect supply or demand? For example, suppose an increase in U.S. income causes Americans to increase their demand for all normal goods, including those from the euro area. An increase in U.S. income will shift the U.S. demand curve for euros to the right, as Americans seek euros to buy more German automobiles and European vacations.

This increased demand for euros is shown in Figure 18.6 by a rightward shift of the demand curve for euros. The supply curve does not change, because an increase in U.S. income should not affect the euro area's willingness to supply euros. The rightward shift of the demand curve from D to D' leads to an increase in the exchange rate from $1.10 per euro to $1.12 per euro. Thus, the euro increases in value, while the dollar falls in value. The higher exchange value of the euro prompts some people in the euro area to purchase more American products, which are now cheaper in terms of the euro.

An increase in the dollar price of a euro indicates a weakening of the dollar, or *currency depreciation*. A decrease in the dollar price of a euro indicates a strengthening of the dollar, or a *currency appreciation*.

✓ CHECKPOINT

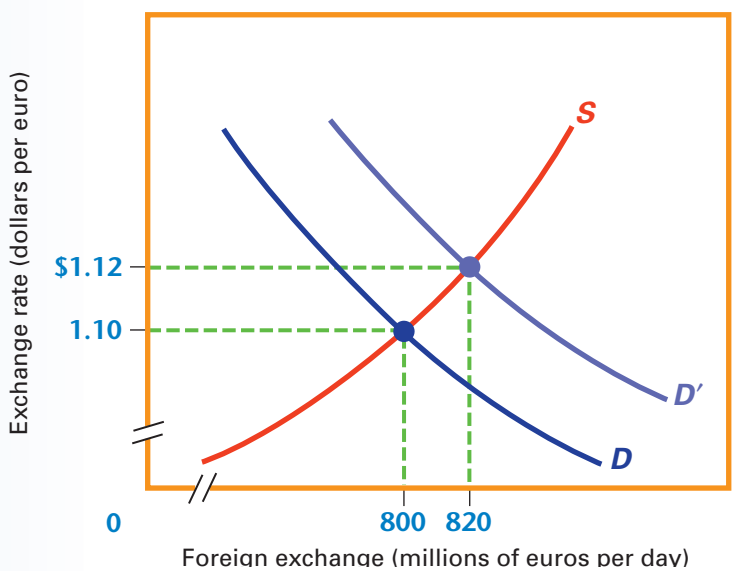
What determines the exchange rate between the dollar and the euro?

The Graphing Workshop

Effect on the Foreign Exchange Market of an Increase in Demand for Euros — **Figure 18.6**

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The intersection of supply curve S and demand curve D determines the exchange rate. At an exchange rate of $1.10 per euro, the quantity of euros demanded equals the quantity supplied. An increase in the demand for euros from D to D′ leads to an increase in the equilibrium quantity from 800 million euros to 820 million euros per day. The market exchange rate increases from $1.10 to $1.12 per euro.



Who Buys Foreign Exchange?

Foreign exchange is purchased mainly by those who buy foreign goods or invest abroad, such as importers and exporters, investors in foreign assets, central banks, and tourists. Other groups also regularly participate in foreign exchange markets as well, including speculators, arbitrageurs, and people seeking a safe haven.

Speculators

Speculators buy or sell foreign exchange in hopes of profiting later by trading the currency at a more favorable exchange rate. By taking risks, speculators aim to profit from market fluctuations—that is, they try to buy low and sell high.

Arbitrageurs

Exchange rates between specific currencies are nearly identical at any given time in markets around the world. For example, the dollar price of a euro is nearly the same in New York, Paris, Tokyo, London, Zurich, Hong Kong, Istanbul, and other financial centers. *Arbitrageurs* are money dealers who take advantage of tiny differences in exchange rates between markets. Their actions help ensure that exchange rates are the same across markets. For example, if one euro trades for $1.10 in New York but for $1.11 in Paris, an arbitrageur could buy, say, $1,000,000 worth of euros in New York and at the same time sell them in Paris for $1,009,091, thereby earning $9,091 minus the transaction costs of the trades.

Abitrageurs take less risk than speculators because they *simultaneously* buy currency in one market and sell it in another. In this example, the arbitrageur increases the demand for euros in New York and increases the supply of euros in Paris. These actions increase the dollar price of euros in New York and decrease it in Paris.

Those Seeking a Safe Haven

Finally, people in countries suffering from economic and political turmoil may buy more stable currencies as a hedge against the depreciation and instability of their own currency. For example, the dollar has long been accepted as an international medium of exchange. It is also the currency of choice in world markets for oil, gold, and illegal drugs.

The euro may soon challenge the dollar as the key world currency, in part because the largest euro denomination, the 500 euro note, is worth about six times a 100 dollar note, the top U.S. note. So it would be six times easier to smuggle currency or conduct cash transactions using euros rather than dollars.

NET Bookmark

Access the Forex-Markets web site for information about current foreign currency exchange rates through thomsonedu.com/school/econxtra. Browse the site to find the current value of the U.S. dollar compared with the euro, the yen, and the Canadian dollar. Also find out whether the U.S. dollar is trending up or down as compared to these currencies. Record your answers.

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✓ CHECKPOINT

Who participates in the market for foreign exchange?

Exchange Rate Systems

So far the discussion has been about **flexible exchange rates**, with the rate determined by supply and demand. A flexible, or *floating,* exchange rate adjusts continually to the many forces that affect the foreign exchange market. When the exchange rate is flexible, government officials usually have only an indirect role in foreign exchange markets.

However, if government officials try to set, or fix, the exchange rate, active and ongoing central bank intervention is often necessary to establish and maintain this **fixed exchange rate**. For example, prior to World War II, the value of each major currency was fixed in relation to gold. This was called the *gold standard.* Because currencies were fixed in relation to gold, they also were fixed in relation to each other.

From the end of World War II until 1971, other nations could redeem dollars for gold at a fixed exchange rate. The dollar during that period was tied to gold. The U.S. Treasury was by law required to sell foreigners gold at $35 per ounce. The values of other currencies were fixed in relation to the dollar, which was fixed in relation to gold.

In 1971, the United States experienced a trade deficit and stopped selling gold to foreigners. No longer tied to gold, the value of the dollar began to float. Exchange rates among major world currencies became flexible, and they remain so today. Some economies, notably China, still fix the value of their currency in terms of U.S. dollars. By choosing an exchange rate that undervalues its own currency, China makes foreign products more costly to Chinese consumers and makes Chinese products cheaper abroad. That's one reason why the U.S. trade deficit with China is so large.

flexible exchange rate

Exchange rate determined by the forces of supply and demand without government intervention

fixed exchange rate

Exchange rate fixed within a narrow range and maintained by central banks' ongoing purchases and sales of currencies

✓ CHECKPOINT

Compare a system of flexible exchange rates to one of fixed exchange rates.

Main Idea

Gain from Trade

Exchange rate systems allow trade among nations to take place. How do individuals gain from trade among nations?



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Assessment 18.4

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Key Concepts

1. What effect would each of the following events have on the exchange rate for the U.S. dollar relative to other currencies? Explain each of your answers.
   - A new sports car is produced in Japan that many U.S. consumers choose to purchase.
   - U.S. banks offer depositors higher interest rates. This causes many people in other nations to deposit funds in U.S. banks.
   - Many U.S. businesses choose to invest in businesses in other nations.
2. Why didn't the conversion by many European nations to the euro at the start of 2002 eliminate all trade problems between nations in the euro area?
3. How may the conversion by many European nations to the euro have helped U.S. firms that trade with these nations?
4. How are arbitrageurs able to change the exchange rates for different currencies?
5. Why did the fixed exchange rate system often result in imbalances in trade among nations?

Graphing Exercise

6. In July 2006, exchange rates for the U.S. dollar in terms of other currencies varied widely. Suppose you were considering taking a package vacation in one of the nations listed below. Divide each price by the appropriate exchange rate to calculate the number of U.S. dollars you would have to pay for each trip. Construct a bar graph to show the relative cost of each trip. What other factors would you consider when choosing among these trips?

   Exchange Rate for U.S. Dollar in Selected Currencies, July 12, 2006

   $1 = 1.134 Canadian dollars
   $1 = 115.49 Japanese yen
   $1 = 0.787 euros
   $1 = 11.062 Mexican pesos

   - A one-week trip to Canada costs 1,360.80 Canadian dollars.
   - A one-week trip to Japan costs 230,980 Japanese yen.
   - A one-week trip to Germany, a euro-area country, costs 1,259.20 euros.
   - A one-week trip to Mexico costs 15,486.80 Mexican pesos.

Think Critically

7. **Math** Toward the end of 2000, the exchange rate was 1.10 euros to the U.S. dollar. By the summer of 2006, the euro became more valuable at 0.80 euros per dollar. Thus it took fewer euros to buy a dollar. What percentage increase was this in the value of the euro? How did this euro appreciation affect the ability of U.S. firms to sell their products to European Union member nations?

CONNECT TO HISTORY



Tariffs and Trade, Part I

Alexander Hamilton served as our country's first Secretary of the Treasury from 1789 to 1795. His vision for the United States included manufacturing. To protect the nation's young industries, he proposed a protective tariff. Because most Americans were doing well at agriculture, there was little incentive in the United States to engage in manufacturing. Therefore, Congress, which had passed a modest tariff in 1789 for revenue purposes, did not support Hamilton's proposal. Still, the tariff became the federal government's chief source of revenue until 1913.

The Napoleonic Wars (1799–1815) provided the spark for American manufacturing and a move toward protective tariffs. This pattern, repeated during each war in the country's early history, would trigger protectionism. Tariff rates were increased for revenue purposes during the War of 1812, and they were not reduced when the war ended.

Throughout the nineteenth century, the tariff was the nation's most important economic policy and became a huge political issue. The South supported low tariffs, and the North favored higher, more protective rates. Tariff rates inched up until the crisis caused by the 1828 "Tariff of Abominations." The South, believing the tariff favored the more industrial North, claimed the theory of "nullification," by which it could invalidate federal laws within its borders. President Jackson threatened to collect the tariffs by force. Henry Clay defused the situation by negotiating a reduction of rates. The South did not renounce the theory of nullification, and the rift between it and the North opened.

When the split erupted into the Civil War, the United States' tariff policy changed. Strapped for money, the government raised tariff rates by passing the 1861 Morrill Tariff, and tariffs were kept high until 1913, as was shown in Figure 18.2. Following the Civil War, the South's political power diminished. As the United States began a period of rapid industrialization and became more self-sufficient, the importance of international trade declined. The nation's industrialists, supported by the Republican Party, were able to maintain high tariffs. Advocates of low tariffs feared that protective tariffs would cause manufacturing to grow, giving that sector more political power than the agricultural sector.

When tariff rates finally were reduced in 1913, they were replaced by an income tax so as to maintain (and shift the burden of) revenues. Still, the reductions of 1913 had less effect than predicted, primarily because of World War I. The return of higher tariffs reached a peak with the Smoot-Hawley Tariff. This tariff, enacted in 1930 during the beginning of the Great Depression, further decreased world trade.

THINK CRITICALLY

Imagine you are a member of Congress immediately after the Civil War. Take a position for or against keeping tariffs high. Then write a paragraph justifying your point of view.

18 Chapter Assessment

Summary

18.1 Benefits of Trade

a Countries trade to improve the standard of living of their people. Each country benefits from comparative advantage by specializing in those products that involve the lowest opportunity cost.

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b Trade can benefit nations even when no nation enjoys a comparative advantage. When nations trade, they produce larger quantities, thus taking advantage of economies of scale. Differences in taste across countries also can make trade desirable.

c The United States exports many products, especially services, capital goods, and industrial supplies. The most important U.S. imports are consumer goods, capital goods, and industrial supplies.

18.2 Trade Restrictions and Free-Trade Agreements

a The flow of trade in the global economy is restricted by government barriers including *tariffs, quotas,* and other restrictions. A tariff taxes an imported good. A quota limits the amount of a good that may be imported.

b All U.S. barriers to trade reduce supplies of goods and services to the United States and increase the prices paid by U.S. consumers. When one nation imposes trade restrictions, other nations are likely to retaliate with their own restrictions. In addition, resources are wasted when firms and interest groups pressure governments to impose trade restrictions.

c The *General Agreement on Tariffs and Trade (GATT)* reduced tariffs and quotas. Participating nations agreed to treat all other members equally. The *Uruguay Round* of trade agreements, which took place between 1986 and 1994, set the goals of reducing tariffs by 85 percent and eliminating all quotas. The agreement also established the *World Trade Organization (WTO),* which now provides the foundation for the world's multilateral trading system. The *Doha Round* aims to reduce trade barriers that harm developing nations. Common markets or free-trade zones have been established to promote the free flow of goods, services, people, and capital among member nations.

18.3 Balance of Payments

a The *balance of payments* is the record of all economic transactions between U.S. residents and residents of the rest of the world. Two broad accounts are included in each nation's balance of payments: the *current account* and the *financial account*. Trade of goods is measured by the *merchandise trade balance.*

b Some people send money to friends and relatives in other countries. This flow of money is a debit in the balance-of-payments account. Net unilateral transfers combined with the balance of goods and services results in the current account balance.

c The financial account tracks the flow of financial capital resulting from international transactions. It is impossible to keep track of every international transaction, so any discrepancy between credits and debits in the current account and the financial account is "balanced" by including an offsetting statistical discrepancy.

18.4 Foreign Exchange Rates

a *Foreign exchange* is the money used to carry out international transactions. The *exchange rate* is the dollar price of one unit of foreign currency.

b Twelve European nations have adopted a single currency, the euro.

c Foreign exchange is most often purchased to buy foreign goods or to invest abroad.

d Before 1971, many nations fixed exchange rates for their currencies in terms of gold. This system was replaced in 1971 with a floating exchange rate system. Some countries, such as China, still fix their exchange rate relative to the dollar.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The amount by which the value of merchandise exports exceeds the value of merchandise imports during a given period

_____ **2.** A tax on imports

_____ **3.** A record of all economic transactions between residents of one country and residents of the rest of the world during a given period

_____ **4.** Foreign money needed to carry out international transactions

_____ **5.** The portion of the balance of payments that records exports and imports of goods and services, net investment income, and net transfers

_____ **6.** An exchange rate determined by the forces of supply and demand without government intervention

_____ **7.** The amount by which the value of merchandise imports exceeds the value of merchandise exports during a given period of time

_____ **8.** A legal limit on the quantity of a particular product that can be imported

_____ **9.** An exchange rate fixed within a narrow range of values and maintained by central banks' ongoing purchases and sales of currencies

_____ **10.** The portion of the balance of payments that records international transactions involving financial assets

a. balance of payments

b. current account

c. exchange rate

d. financial account

e. fixed exchange rate

f. flexible exchange rate

g. foreign exchange

h. General Agreement on Tariffs and Trade (GATT)

i. merchandise trade balance

j. quota

k. tariff

l. trade deficit

m. trade surplus

n. Uruguay Round

o. world price

p. World Trade Organization (WTO)

Review Economic Concepts

11. True or False The law of comparative advantage states that the individual or firm with the lowest opportunity cost of producing a particular good should specialize in that good.

12. A nation could enjoy a comparative advantage as a result of possessing each of the following except

a. superior labor.

b. superior resources.

c. superior capital.

d. superior consumers.

13. Countries can gain from specialization and trade if that trade results in __?__ for producers in that country. That is, the producers' average costs of output decline as they expand their scale of production to meet the increased demand.

14. True or False Without comparative advantage, international trade has no point.

15. The category of exports from the United States that has the greatest value is

a. capital goods.

b. consumer goods.

c. industrial supplies.

d. services.

16. The __?__ for a good or service is determined by world supply and world demand for the product.

17. The category of U.S. imports with the greatest value is
    a. capital goods.
    b. consumer goods.
    c. industrial supplies.
    d. services.

18. A *tariff* that is placed on an imported good will __?__ of the taxed product.
    a. harm consumers and producers
    b. harm consumers and benefit producers
    c. benefit consumers and producers
    d. benefit consumers and harm producers

19. **True or False** A *tariff* on imported goods will have no affect on the price of products made in that country.

20. A(n) __?__ is a legal limit on the amount of a product that may be imported into a nation.

21. Trade restrictions cause
    a. the value of international trade to grow.
    b. the price of products consumers purchase to decline.
    c. the selection of products from which consumers may choose to grow.
    d. the number of people employed in export industries to decline.

22. The __?__ provides the legal and institutional foundation for the world's multilateral trading system.

23. **True or False** When one nation sets trade restrictions, other nations are unlikely to respond with their own restrictions.

24. Trade of goods is measured by the *merchandise trade balance* that is equal to
    a. the value of a nation's exports plus the value of its imports.
    b. the value of a nation's imports less the value of its exports.
    c. the value of a nation's exports less the value of its imports.
    d. the value of a nation's exports.

25. **True or False** The *current account* keeps track of trade in goods and services, the flow of interest and profits across international borders, and the flow of foreign aid and cash gifts.

26. Which of the following would appear as a credit in a nation's *balance of payments*?
    a. Businesses in that country purchase resources from other nations.
    b. Banks in that country lend money to people in other nations.
    c. Farmers in that country sell grain to firms in other countries.
    d. Residents of that country send cash to their relatives in other countries.

27. When the unilateral transfers are combined with the balance of goods and services, the result is the __?__.

28. **True or False** The *exchange rate* for the U.S. dollar relative to other currencies is set and controlled by the U.S. government.

29. Before 1971, many nations fixed *exchange rates* for their currencies
    a. according to the value of crude oil.
    b. according to the value of a group of European currencies.
    c. according to the value of the Japanese yen.
    d. according to the value of gold.

30. A __?__ *exchange rate* system was created in 1971 under which exchange rates for major currencies are determined by demand and supply.

Apply Economic Concepts

31. **Determine the Price of an Imported Good** You have decided to buy a new camera while traveling in Germany. The price is 275 euros. If the exchange rate for euros is 0.91 per one U.S. dollar, how many dollars will the camera cost? What other costs should you consider?

Type of Resource	Amount of Resource Required A	B	Cost of Resource A	B
Labor	2 hours	6 hours	$10 per hour	$6 per hour
Raw materials	20 lbs	20 lbs	$1.00 per lb	$.80 per lb
Power	150 kwh	80 kwh	$.03 per kwh	$.04 per kwh
Tools	1 robot system	1 hand tool	$3 per chair	$1 per chair

32. **Determine Comparative Advantage** In the table above, countries A and B are able to produce similar chairs from the resources shown. Determine which nation has a comparative advantage in this type of production. What should the other nation do to maximize the value of its production?

33. **Impose a Barrier to Trade?** Assume you are the prime minister of a poor nation that is located in another part of the world. Your government has been working to encourage economic growth by investing in new technology and training in modern skills for its workers. Although some progress has been made, there is a long way to go before your nation's businesses can compete successfully with those in other countries. Decide what type of barrier to trade (tariff or quota) you would impose in the following situations. You also may choose to impose no barrier at all. Explain each of your choices.
    a. Your nation has invested in firms that produce kitchen appliances. These firms' costs are about 25 percent higher than the cost of buying imported appliances from producers in other nations. The firms are selling few of their products and are in danger of failing. What barrier if any, would you place on the importation of appliances?
    b. Your nation has no known oil reserves. It imports all the oil it uses from other nations. More money is spent paying for oil than is spent for any other imported product. A large part of the imported oil is used by consumers who like to take long weekend drives in the country. You would like to see more of your nation's money spent importing tools and machinery. What barriers would you place on the importation of oil?
    c. Your nation has fertile land that could be used to grow fruits it might export. Unfortunately, it lacks the ability to produce fertilizer, which these crops require. What barriers, if any, would you place on the importation of fertilizer?

34. **Sharpen Your Skills: Critical Thinking** Because of fears of terrorism and a general decline in economic activity in 2001, many airlines and hotels suffered from a reduced demand for their services. U.S. consumers were able to take discounted vacations either in the United States or in foreign nations. One New York City travel agency offered consumers a one-week vacation in London for $699 or a one-week vacation in California for the same price. If you had been looking for a vacation destination, which of these alternatives would you have chosen? What role would a desire to support the U.S. economy have played in your decision-making process?

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35. Access **EconDebate Online** at thomsonedu.com/school/econxtra. Read the policy debate entitled "Does the U.S. economy benefit from foreign trade?" Choose one side of this issue (for or against foreign trade) and write a paragraph arguing for that point of view.

19 Economic Development

19.1 Developing Economies and Industrial Market Economies

19.2 Foreign Trade, Foreign Aid, and Economic Development

19.3 Rules of the Game, Transition Economies, and Convergence



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CONSIDER

Why are some countries poor while others are rich?

What determines the wealth of nations?

How much does foreign aid help poorer countries?

How does terrorism affect economic development?

What's the "brain drain," and how does it affect poorer countries?

Why are birth rates higher in poorer countries?

Are poorer countries catching up with the rest of the world?

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19.1 Developing Economies and Industrial Market Economies

Objectives

- Distinguish between developing countries and industrial market countries.
- Explain why labor productivity is so low in developing countries.

Overview

People around the world face the day under quite different circumstances. Many Americans rise from a comfortable bed in their own home, select the day's clothing from a wardrobe, choose from a variety of breakfast foods, and ride to school or to work in one of the family's automobiles. In contrast, most of the world's 6.6 billion people have little housing, clothing, or food. They own no automobile, and many have no real job. Their health is poor, as is their education. Many cannot read or write.

Key Terms

developing countries

industrial market countries

fertility rate

In the News

Local Knowledge Helps Home-Grown Firms Expand into Other Developing Countries

For years investment in the economies of developing countries came primarily from firms in the industrialized countries. This is changing. Drawing on their expertise in overcoming obstacles from culture, to corruption, to bad roads, to spotty electricity, some firms in developing countries are finding success by expanding into other developing countries, especially emerging markets. Companies that take greater risks often find better growth opportunities. Carlos Slim, a Mexican telecom mogul, now controls companies that service more than 80 million customers in several countries and is the leading wireless provider in Latin America. The Mexican company Cemex, the world's third leading cement company, is called the Domino's of cement because it uses the global positioning system from satellite-based navigation to ensure faster delivery. Many companies begin close to home but later spread around the globe. Wherever they go, they often invest in the local economy, buy locally when possible, and create jobs. "Too often multinationals look at a host country as a place to extract profits," explains a Marcopolo CEO. "You can destroy your reputation that way." Companies from developing countries try to do a better job than the typical multinational by adapting more to the local culture and by focusing on the mutual gains from production and exchange.

THINK ABOUT IT

Tarun Khanna of the Harvard Business School observed that "what's important is not the absolute amount of risk but your ability to bear it better than anyone else." How does this help explain the success of multinationals in developing countries?

Sources: Mac Margolis, "Flying South—How Rapidly Rising Capital Flows Between Poor Nations Are Starting to Reshape the Geography of Investment," *Newsweek International*, December 26, 2005.

Ask the Xpert!

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Why are some nations rich but others are poor?

Worlds Apart

Countries can be classified in a variety of ways, based on their level of economic development. The yardstick used most often is to compare living standards across nations. The most common measure of living standards is a nation's *GDP per capita*. Recall that GDP per capita measures how much an economy produces on average per resident. Based on that measure, countries can be sorted into two broad categories:

1. developing countries, which have lower levels of GDP per capita income, and
2. industrial market countries, which have higher levels of GDP per capita.

industrial market countries

Economically advanced market countries of Western Europe, North America, Australia, New Zealand, and Japan

Developing and Industrial Market Countries

Developing countries not only have lower GDP per capita. They also usually have higher rates of illiteracy, higher unemployment rates, extensive underemployment, and rapid population growth. On average, more than half the labor force in developing countries works in agriculture. Because farming methods are relatively primitive there and farms are small, farm productivity is low, and most people barely subsist.

developing countries

Nations with low GDP per capita, high rates of illiteracy, high unemployment, and high fertility rates

About 5 billion of the world's 6.6 billion people live in developing countries. China and India, the two population giants, together account for half the developing world's population.

Industrial market countries not only have higher GDP per capita, they also have lower illiteracy rates, lower unemployment, and slower population growth. **Industrial market countries** consist of the economically advanced nations of Western Europe, North America, Australia, New Zealand, and Japan. They were the first countries to experience long-term economic growth during the nineteenth century. About 1.6 billion of the world's 6.6 billion population live in industrial market countries.

Figure 19.1 shows 10 representative countries based on GDP per capita. GDP has been adjusted to reflect the actual buying power of currency in each economy. The United States, Canada, Japan, and the United Kingdom are industrial market economies. The rest are developing economies.

The United States had a GDP per capita in 2005 that was five times that of Brazil, a developing country. But GDP per capita in Brazil, in turn, was about nine times that of Sierra Leone, one of the poorest countries on Earth. Thus, developing countries are not uniformly poor. Residents of Brazil likely feel poor relative to industrial market countries such as the United States, but they are well off compared to the poorest developing countries. Per capita GDP in the United States was 47 times greater than in Sierra Leone. Thus, there is a wide range of productive performance around the world.



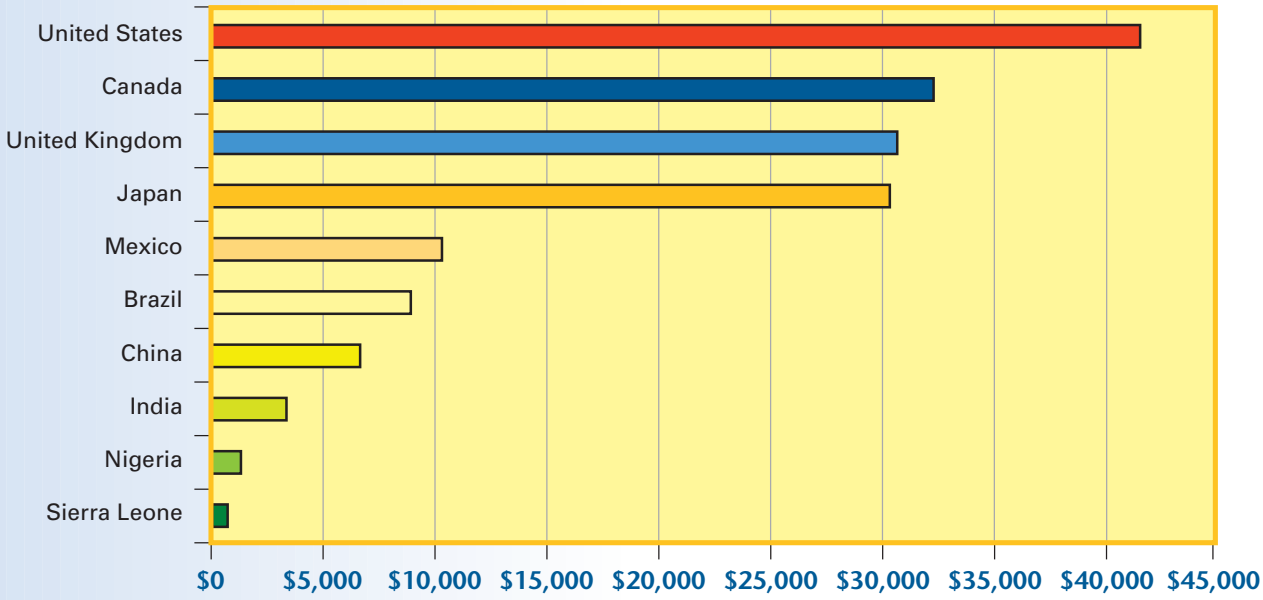
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How does this photograph suggest that the woman lives in a developing country?

Life Expectancy

Differences in stages of development among countries are reflected in a number of ways besides GDP per capita. For example, many people in developing countries suffer from poor health as a result of malnutrition and disease. HIV/AIDS is devastating some developing countries, particularly those in Africa

GDP Per Capita for Selected Countries in 2005 — **Figure 19.1**



There is a wide range of productive performance around the world.

Source: *The World Factbook 2006*, from the Central Intelligence Agency, which can be found at www.cia.gov/cia/publications/ factbook/ index.html. Figures reflect the purchasing power of currencies in each country.

and the Caribbean. According to UNICEF, about 5,000 Haitian children are born with the HIV/AIDS virus each year.

The average life expectancy around the world ranges from about 37 years in the poor African country of Sierra Leone to 82 years in the industrial market economy of Japan. The world average is 67 years. Countries with the shortest life expectancies also have the highest child mortality. The mortality rate refers to the death rate before a certain age. For example, about three in 10 children in Sierra Leone die before reaching age five. This is 35 times the U.S. rate.

Malnutrition is a primary or contributing factor in most deaths among young children in poor countries. Diseases that are easily controlled in industrial economies—malaria, whooping cough, polio, dysentery, typhoid, and cholera—can become deadly epidemics in poor countries, where safe drinking water often is hard to find.

High Birth Rates

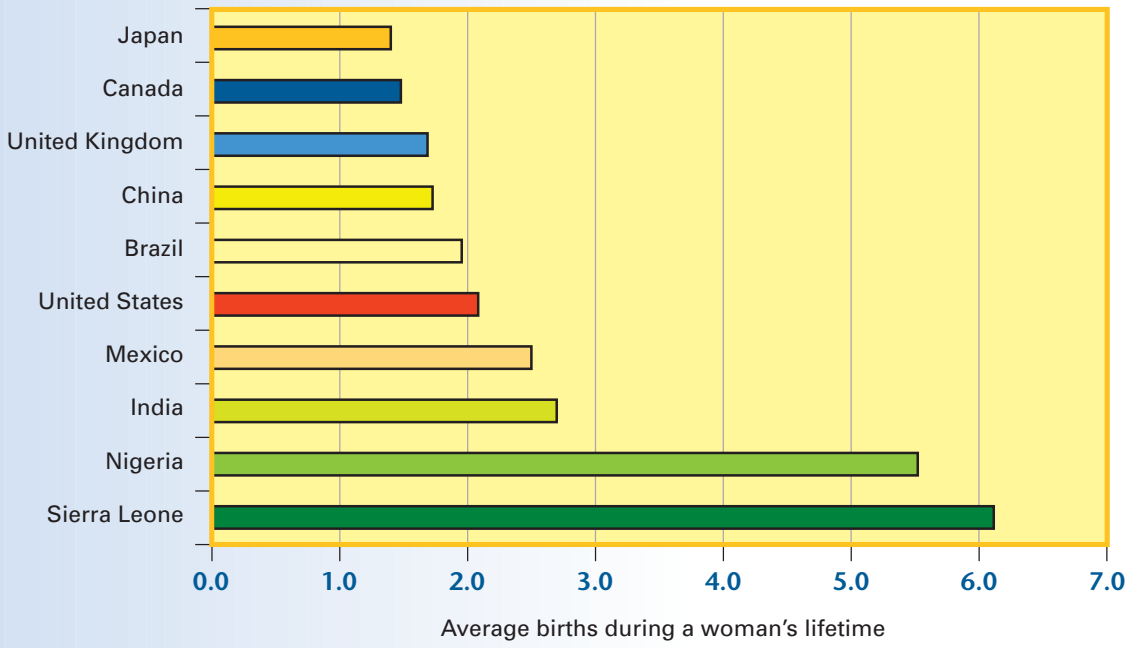
Developing countries also are identified by their high birth rates. This year, about 65 million of the 75 million people added to the world's population will be born in developing countries. In fact, the **fertility rate**, which is the average number of births during a woman's lifetime, is an easy way of distinguishing between developing and industrial countries. Few developing countries have a fertility rate of less than 2.2 births per woman, but no industrial country has a fertility rate above that rate.

fertility rate
The average number of births during each woman's lifetime

Figure 19.2 presents the fertility rates for the 10 countries introduced in Figure 19.1. As you can see, rates are lower in industrial countries and higher in developing countries. The exceptions are China and Brazil, developing countries with lower fertility rates than the United States. China's official policy limits families to one child. In Brazil, rapid strides in education and increased family planning have reduced fertility rates. Sub-Saharan African countries are the poorest in the world and have the highest fertility rates.

Fertility rates are higher in developing countries for a variety of reasons. Among these is that parents there view

Fertility Rates for Selected Countries as of 2006 — **Figure 19.2**



Fertility rates are lower in industrial countries and higher in developing countries.

Source: Estimates from *The World Factbook 2006,* from the Central Intelligence Agency, which can be found at www.cia.gov/cia/publications/ factbook/index.html.

children as a source of farm labor. Also, most developing countries have no pensions or social security systems, so parents have more children to support them in old age. The higher child mortality rates in poorer countries also lead to higher birth rates, as parents strive to achieve sufficiently large families.

Attitudes about family size are changing, however, even in the poorest countries. According to the United Nations, the birth rate during a typical woman's lifetime in a developing country has fallen from six in 1965 to less than three children today. As women become better educated, they earn more. Women who are pregnant or who have young children are less able to work. Thus, because their opportunity cost of child bearing has increased, women have chosen to have fewer children.

NET Bookmark

The CIA World Factbook web site is a great source for information about the populations and economic situations of countries throughout the world. Access this site through thomsonedu.com/school/econxtra. Select a country that interests you. Find the following facts about that country's people: infant mortality rate, life expectancy at birth, and total fertility rate. Then examine the information about the country's economy. Read the "Economy—Overview" paragraph and the statistics given about the country's economy. Compare the facts you found about the country's people with the information about the economy. Write a paragraph that explains the relationship between the two sets of information.

thomsonedu.com/school/econxtra

✓ CHECKPOINT

What are some clear differences between developing economies and industrial market economies?

Productivity and Economic Development

You have examined some symptoms of poverty in developing countries. However, you have yet to explore why poor countries are poor. Simply put, poor countries are poor because they do not produce many goods and services.

Low Labor Productivity

Labor productivity, measured as output per worker, is low in developing countries. Why? Labor productivity depends on the quality of the labor and on the amount of capital, natural resources, and other resources that combine with labor to create production. For example, a farmer who has abundant land and uses modern techniques and equipment, healthy seeds, proper irrigation, and nurturing fertilizer can grow more food than can a hundred farmers trying to scratch out a living on smaller plots using primitive tools.

One way a country raises productivity is by investing more in human and physical capital. National savings usually finance this investment. Income per capita often is too low in developing countries to allow for much national saving or investment. In poor countries with unstable or corrupt governments, those who can afford to save and invest in their nation's economy often send their savings abroad to invest in more stable economies.

What about foreign investments in developing countries? Governments of developing countries heavily regulate private international borrowing, lending, and investing. These countries are therefore less attractive to foreign investors. For example, some developing countries, such as China, have required foreign investors to find a local partner who must be granted controlling interest in the business. Mexico does not allow Americans to buy land within 30 miles of the coastline or to invest in the energy sector.

Thus, in developing countries there is less financial capital available for investment in either human or physical capital. With less physical and human capital, labor productivity is lower.

Less Education

Education enables workers to use modern production techniques and technology. Education also makes workers more receptive to new ideas and production methods. Countries with the most advanced educational systems also were the first to develop economically. For example, the United States has been a world leader in free public education and in economic development.

In the poorest countries, most adults can't read or write. For example, two-thirds of adults in Sub-Saharan Africa are illiterate. When knowledge is lacking, other resources are not used as efficiently. For example, a country may be endowed with fertile land, but farmers may not understand the best means of irrigation, fertilization, and crop rotation.



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The literacy rate in the United States is 99 percent. This means that 99 percent of the U.S. population over the age of 15 can read and write. Why do you think that countries with the most advanced educational systems also have the most highly developed economies?

Rates of illiteracy are much lower in industrial economies, where fewer than 5 percent of adults can't read or write.

Child labor in developing countries reduces educational opportunities. In Pakistan, for example, there are enough classrooms and teachers for only one-third of the country's school-age children. School fees can be prohibitive for poor families. More than 10 million Pakistani children work full-time, usually in agriculture.

Inefficient Use of Labor

Another feature of developing countries is that they use labor less efficiently than do industrial nations. Unemployment and underemployment reflect inefficient uses of labor. Recall that underemployment occurs when skilled workers are employed in low-skill jobs or when people are working less than they would like—such as working only part time when a full-time job is preferred. Only a small proportion of the work force in developing countries have what you would call a regular job with normal hours and a steady paycheck. Most work as day laborers in the informal economy or scratch out a living in agriculture.

Few Entrepreneurs

In order to develop, an economy must have entrepreneurs who are able to

e-conomics

TECHNOLOGY OUTSOURCING TO DEVELOPING COUNTRIES

American businesses have taken advantage of unemployment and underemployment in developing countries by outsourcing work to these countries. For many years, such outsourcing mainly involved moving factory work to developing countries, where the company could hire workers for a much lower wage than in the United States. The ability to outsource has increased with the advent of the Internet. "With advancements in communications and the Internet," says Chris Kizzier, an offshore outsourcing consultant, "the world has shrunk to the size of a pea, and the fact that you might be 9,000 miles away is irrelevant." In recent years, many companies have saved as much as 60 percent in labor costs by moving information technology (IT) work to developing countries. India has been a primary beneficiary of such outsourcing. Despite reports that the trend of such outsourcing is not abating, American tech professionals are surprisingly upbeat. A national survey of more than 10,000 IT workers with jobs in 2006 found that, although their base salary was stagnant, bonuses have their total pay on the rise. In addition, tech unemployment has fallen below 3%—a healthy level.

THINK CRITICALLY

What are the advantages and disadvantages of U.S. firms outsourcing jobs to developing countries to (a) the firms themselves, (b) the U.S. economy in general, and (c) the economy to which the jobs are outsourced?

Sources: Marianne Kolbasuk McGee "You vs. Offshoring," *Information Week*, April 24, 2006; "Exporting Jobs Saves IT Money," *Computerworld*, March 23, 1999; "Finally a Productivity Payoff from IT?" *Fortune.Com,* December 18, 2002.

bring together resources and take the risk of profit or loss. Many developing countries, particularly those in Africa, were once under colonial rule, where a foreign country governed. Under this system, the local population had few opportunities to develop leadership or entrepreneurial skills.

Reliance on Agriculture

In some developing countries, the average farm is as small as two acres, so the average farmer does not produce much. Even where more land is available, a lack of physical capital limits the amount of land that can be farmed efficiently. More than half the labor force in developing countries works in agriculture. However, because farm productivity is low, less than a third of GDP in those countries stems from agriculture.

In contrast, modern equipment helps a U.S. farmer to work hundreds or even thousands of acres. Though only 2 percent of the U.S. labor force, American farmers grow enough to feed the nation and to lead the world in agricultural exports.

Vicious Cycle of Low Income and Low Productivity

Low productivity obviously results in low income, but low income, in turn, affects worker productivity. Low income means low saving, and low saving means low investment in human and physical capital. These difficult beginnings are made even worse by poor diet and insufficient health care. Therefore, as children grow into adults, they are not well suited for regular employment. Thus, *low income and low productivity may reinforce each other in a vicious cycle of poverty.*

✓ CHECKPOINT

Why is labor productivity low in developing countries?



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On rice plantations in Indonesia, much of the labor is performed by people rather than by modern farming equipment. How does this affect the productivity of Indonesian agriculture?

Assessment 19.1

Key Concepts

Xtra! Study tools
thomsonedu.com/school/econxtra

1. Do you think it was easier for the United States to become an industrialized market economy in the nineteenth century than it is for developing countries today? Why or why not?
2. Why don't reductions in child mortality rates necessarily cause an improvement in the standard of living in developing countries?
3. Why is labor productivity likely to be low in nations that have rapid population growth?
4. Many developing countries rely on parents to teach their children how to produce goods and services. How does this limit their ability to increase production?
5. Why are 2 percent of the U.S. work force able to produce more food than our nation needs while many developing nations cannot grow enough food for themselves even with more than half their population working in agriculture?

Graphing Exercise

6. There are many indicators of a nation's economic wealth and development. One of these is the number of personal computers per 1,000 residents. In 2003, residents of the United States owned more computers than people in any other nation. In the same year, this rate was 20 computers per 1,000 people in Cuba. Use data in the table to construct a bar graph that shows the computer ownership rates in the identified nations. Why is computer ownership a good indicator of a nation's economic wealth and development?

Personal Computer Ownership Per 1,000 Residents in 2003

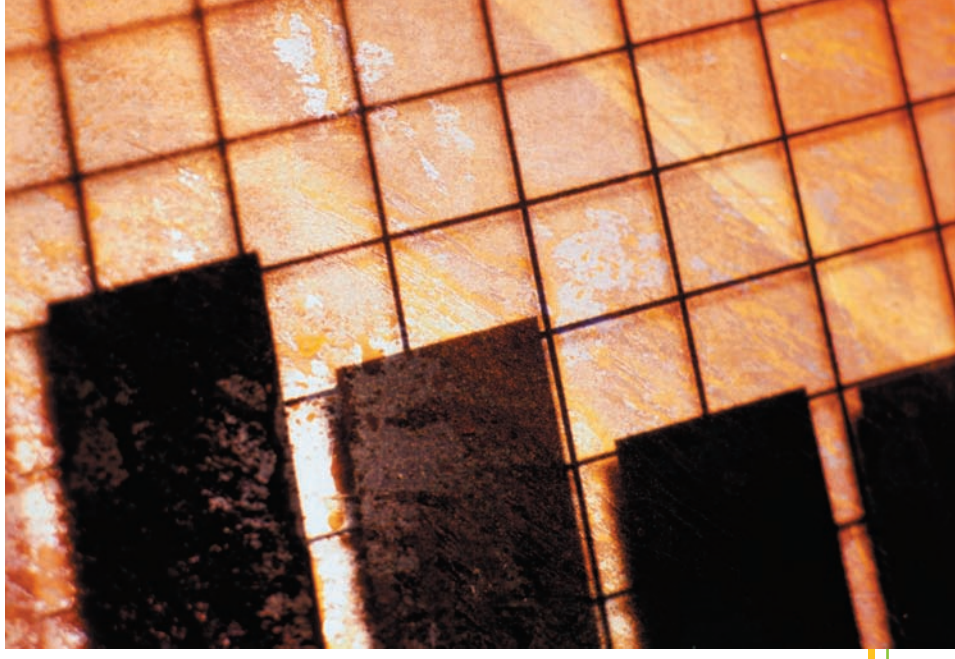
Country	PC Ownership	Country	PC Ownership
Switzerland	710	Belgium	318
Australia	610	Mexico	83
Norway	528	Indonesia	11
Taiwan	470	Pakistan	4

Source: *Statistical Abstract of the United States*, 2006, p. 891.

Think Critically

7. **Management** Assume that you own a small business in a developing country that produces aluminum cooking pots. Through hard work and thrift, you have been able to save enough money to purchase a machine that can produce cooking pots twice as fast as your business has in the past. In order to use this machine, you would need to hire someone to train your workers. This training would cost almost as much as the machine itself. Under these conditions, would it make sense for you to purchase the machine? What alternatives do you have if you want your business to become more efficient and grow?

Sharpen Your Skills



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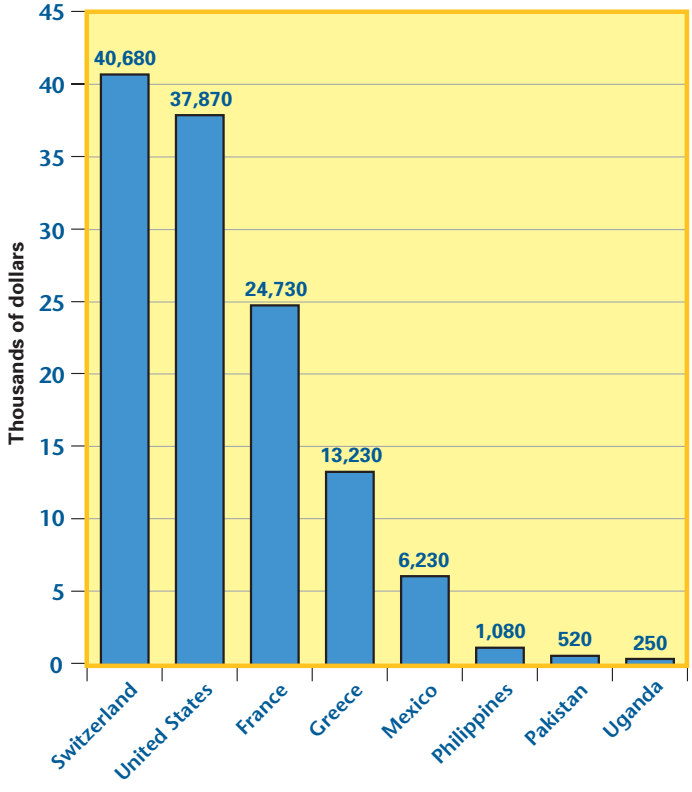
Analyze Visuals

The gross national income (GNI) is a measure of production and income that was created as part of the United Nations System of National Accounts in 1968. One of its purposes is to improve the quality of economic comparisons among nations. The GNI measures the total domestic and foreign value added by residents of a nation, or more simply put, a nation's GDP plus the compensation of employees and property income from nonresident sources. An example of these nonresident sources would be income received by a U.S. musician who is paid a royalty when a firm in Japan uses a song he has written. By dividing a nation's GNI by its population, its GNI per capita may be determined. Studying per capita GNI is a common way to learn about nations' relative state of productivity and economic development. The graph of different nations' per capita GNI can be used to quickly compare their relative levels of economic development.

Apply Your Skill

Study the graph and draw conclusions about economic factors that are likely to contribute to each nation's ability or inability to achieve a high level of GNI.

Average Per Capita GNI of Selected Nations, 2003
(Values expressed in U.S. dollars)



Source: *Statistical Abstract of the United States*, 2006, p. 873.

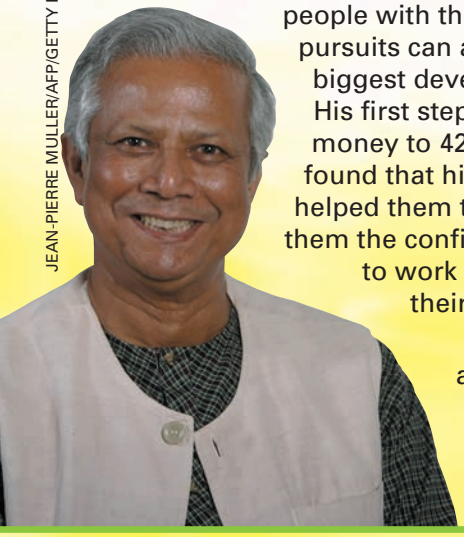
movers & shakers

Muhammad Yunus, Founder *The Grameen Bank*

Muhammad Yunus has turned conventional banking on its head, and he is being rewarded for doing so.

In 1974 Yunus, then an economist and professor at Chittagong University in Bangladesh, led his students on a field trip to a poor village. They met a woman who made bamboo stools. She told them that after borrowing the money she needed to buy supplies, and then repaying the money with interest of as much as 10 percent per week, she was left with only a penny per stool.

Yunus responded by thinking that if the woman and others like her were able to borrow money at more reasonable interest rates, they would be able to pull themselves out of poverty. At the time, he was quoted as saying, "These millions of small people with their millions of small pursuits can add up to create the biggest development wonder." His first step was to lend his own money to 42 basket weavers. He found that his loans not only helped them to survive, but gave them the confidence and initiative to work harder and increase their profits.



JEAN-PIERRE MULLER/AFP/GETTY IMAGES

Although local banks and the government advised against it, Yunus continued providing loans, and in 1983 founded the Grameen Bank. As of May 2006, the Grameen Bank (which means "village bank") had 2,185 branches in Bangladesh serving 6.4 million borrowers in 69,140 villages. The bank lends out nearly half a billion U.S. dollars a year at an interest rate just sufficient to keep the bank in business. Ninety-seven percent of borrowers are women. The repayment rate is 99 percent, higher than in any other banking system.

To encourage the children of borrowers to stay in school, the bank offers more than 6,000 scholarships each year and provides student loans to those in schools who are working to become doctors, engineers, lawyers, and scientists.

In December 2006, Yunus and the Grameen Bank were awarded the Nobel Peace Prize. According to the selection committee, their efforts to create economic and social development from below help people out of poverty, and thereby advance the cause of democracy and human rights.

Yunus was born in 1940, the third of 14 children, including five who died in infancy. He was awarded a Fulbright scholarship and received his Ph.D. from Vanderbilt University in Nashville, Tennessee. Later he became head of the Economics Department at Chittagong University in Bangladesh. "If I could be useful to another human being, even for a day, that would be a great thing. It would be greater than all the big thoughts I could have at the university," he said.

SOURCE READING

Reread Yunus' philosophy, as stated in his quotation in the final paragraph above, and rewrite it in your own words.

Source: www.grameen-info.org

ENTREPRENEURS IN ACTION

The textbook states, "Low income and low productivity may reinforce each other in a vicious cycle of poverty." In groups, discuss what is being done in the U.S. to overcome this cycle among the poor. How does this compare to what is being done by the Grameen Bank?

19.2 Foreign Trade, Foreign Aid, and Economic Development

Objectives

- Identify two foreign-trade strategies and assess their impact on economic development.
- Assess the impact of foreign aid on economic development.

Overview

Higher labor productivity and a higher standard of living go hand in hand. To boost labor productivity, developing countries must trade with developed countries to acquire the best capital and the latest technology. This deepening of capital will increase labor productivity on the farm, in the factory, in the office, and in the home. To import capital and technology, developing countries first must acquire the foreign exchange needed to pay for them. Exports usually generate more than half of the annual flow of foreign exchange in developing countries. Foreign aid and private investment make up the rest.

Key Terms

import substitution

export promotion

brain drain

foreign aid

bilateral aid

multilateral aid

U.S. Agency for International Development (USAID)

In the News

"Work Hard, Send Money"

An estimated $350 billion flows as transfers from people in richer countries to friends and relatives in poorer countries each year. For some nations this is more than they receive from foreign aid or exports. Up to a third of the money is never reported officially. It comes from immigrants, legal and illegal, who work in the wealthier countries of North America, Europe, and Asia and send money home. This is not unusual. There are churches throughout Ireland that were financed from patrons in New York or Boston a century ago. What is different is the amount of money flowing from Europe to Africa or from the United States to Latin America, especially to Mexico. Unable to support his family on the $7 a day he earned as a bus driver in Mexico, Cornelio Zamora paid a smuggler $2,500 to take him to the United States. There, working as a house painter, he sends $700 a month home to his family. It has allowed the family to build its first-ever house in Mexico and to send two daughters to school to be trained as a nurse and a teacher. Waly Diabira is one of 300 people from his village in Mali (population 900) living in Paris. Doing what his father did for 25 years before him, he sends half of what he legally earns cleaning offices and homes. The money sent back to Mali by Waly and other immigrants accounts for a critical portion of Mali's national income. The same goes for dozens of poor countries around the world.

THINK ABOUT IT

What is the impact to the home countries of the people who choose to work outside their countries and send money home?

Sources: Vivienne W. A. Bower, Matt Brown, Aamira Leibis, Dolly Mascarea, Sayem Mehmood, Austin Ramzy, Simon Robinson, and Nelly Sidayen, "Follow the Money," *Time International*, December 5, 2005.

Foreign Trade and Migration

What is the role of international trade in economic development? The least-developed economies rely on farming and on natural resources, such as wild game, timber, and mining. Economic development usually involves a shift from agricultural products and raw materials to manufacturing more complex products. If a country is fortunate, this transformation occurs gradually through natural market forces. Sometimes government pushes along the shift. How quickly an economy develops a manufacturing base depends on its trade relations with the rest of the world.

import substitution
A development strategy that emphasizes domestic manufacturing of products that are currently imported

export promotion
A development strategy that concentrates on producing for the export market

Import Substitution

Many developing countries, including Argentina and India, have in the past pursued a trade policy called **import substitution**, whereby the country begins manufacturing products that until then had been imported. Often the packaging and even the name of the product were quite similar to the import, such as "Crust" toothpaste instead of "Crest" toothpaste. To insulate domestic producers from foreign competition, the government usually imposed tariffs, import quotas, or other trade restrictions.

Import substitution became a popular development strategy for several reasons.

1. Demand already existed for these products, so the "what to produce" question was easily answered.
2. By reducing imports, the approach addressed a common problem among developing countries—the shortage of foreign currency.
3. Import substitution was popular with those who supplied labor, capital, and other resources to the protected domestic industries.

Like all protection measures, however, import substitution wiped out the gains from specialization and comparative advantage among countries. Often the developing country replaced low-cost foreign goods with high-cost domestic goods. Domestic producers, insulated from foreign competition, usually failed to become efficient. They often produced goods of inferior quality, compared to the imports they replaced.

Even the balance-of-payments picture did not improve, because other countries typically retaliated with their own trade restrictions. Import substitution protected some domestic industries but hurt consumers with higher prices and lower quality.

Export Promotion

Critics of the import-substitution approach claim that export promotion is a surer path to economic development. **Export promotion** is a development strategy that focuses on producing for the export market. This approach begins with making relatively simple products, such as textiles. As a developing country builds its educational and technological base, producers can then manufacture and export more complex products.

Economists favor export promotion over import substitution because the emphasis is on comparative advantage and trade expansion, rather than trade restriction. Export promotion also forces producers to become more efficient in order to compete in world markets.



In groups of six or eight students, debate the pros and cons of the import substitution trade strategy versus the export promotion strategy. Divide the group into two smaller groups. One group will represent import substitution and the other, export promotion. Spend about 10 minutes in your small groups, studying the textbook in preparation for the debate. Start the debate by presenting your group's strategy to the other group. Then debate the effectiveness of the strategies.

Research shows that global competition increases domestic efficiency. What's more, export promotion requires less government intervention in the market than does import substitution.

Export promotion has been the more successful development strategy. For example, the newly industrialized "Asian Tigers" (Taiwan, South Korea, Hong Kong, and Singapore) have grown much more quickly than import-substituting countries such as Argentina, India, and Peru.

Most Latin American nations, which for decades favored import substitution, are now pursuing free-trade agreements with the United States. Even India is in the process of dismantling trade barriers, especially for high-technology capital goods such as computer chips. Trade barriers in India, however, remain in place for many consumer goods. Indian tariffs average the highest in the world. When it comes to imports, one slogan of Indian trade officials is "Microchips, yes! Potato chips, no!"

International Migration

International migration also affects developing economies. Because unemployment and underemployment are high in developing countries, job opportunities are better in industrial economies. This is a big reason why people in poorer countries try to move to richer countries. Millions of Mexicans, for example, have risked their lives trying to get to the United States.

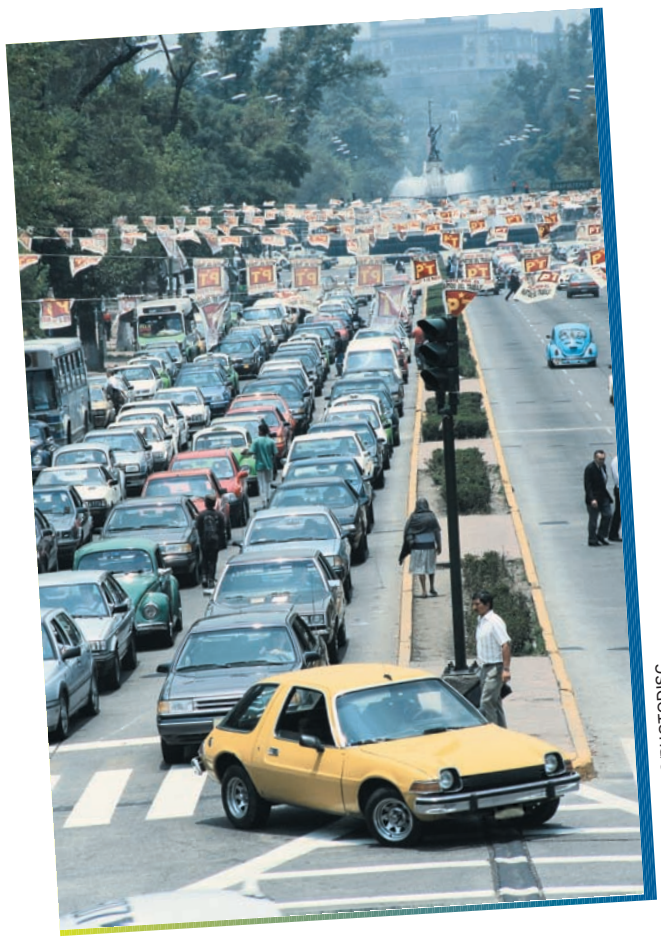
A major source of foreign exchange in many developing countries is the money sent home by migrants who find jobs in industrial countries. For example, Salvadoran migrants in the United States account for a significant chunk of spending power in El Salvador—about 10 percent of GDP. In fact, the Salvadoran economy now uses the U.S. dollar as legal tender, and no longer prints its own currency. Migration provides a valuable safety valve for many poor countries.

There is a downside to migration for the developing country, however. Sometimes the best and the brightest professionals, such as doctors, nurses, and engineers, migrate from developing to industrial countries. For example, in 2005 alone, Kenya lost about 3,000 graduate nurses to other countries, mostly to the United States and the United Kingdom. The United States, with only about 5 percent of the world's population, now employs more than half the world's nurses. Because human capital is such a key resource, this **brain drain** hurts the developing economy in the long run.

brain drain
A developing country's loss of educated migrants to industrial market countries

✓ CHECKPOINT

What are two foreign trade strategies, and what is the impact of each on economic development?



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Nearly 9 million of the 107 million people of Mexico live in Mexico City. Many of these people have come to Mexico City from rural areas in Mexico. What, if anything, do you think this has to do with the migration of Mexicans to the United States?

Foreign Aid

Because poor countries do not generate enough savings to fund an adequate level of investment, these countries often rely on foreign sources of financial capital. What is the role of foreign aid in economic development?

What Is Foreign Aid?

Foreign aid is any international transfer made on especially favorable terms, for the purposes of promoting economic development. Foreign aid includes grants, which need not be repaid. It also includes loans extended on more favorable terms than the recipient could receive otherwise. These loans have lower interest rates, longer repayment periods, and sometimes are wiped off the books entirely. Foreign aid can take the form of cash grants, cash loans, capital goods, technical advice, food, and other assistance.

U.S. Agency for International Development (USAID)
The federal agency that coordinates foreign aid to the developing world

foreign aid
An international transfer of cash, goods, services, or other assistance to promote economic development

Some foreign aid is granted by one country, such as the United States, to another country, such as the Philippines. Country-to-country aid is called **bilateral aid**. Other foreign aid goes through international bodies, such as the World Bank. Assistance provided by organizations that get funds from a number of countries is called **multilateral aid**. For example, the *World Bank* provides grants and loans to benefit development. This includes aid for health and education programs or for basic infrastructure projects like dams, roads, and communications networks. The *International Monetary Fund* extends loans to countries that have trouble with their balance of payments.

bilateral aid
Development aid from one country to another

multilateral aid
Development aid from an international organization, such as the World Bank, that gets funds from many countries

During the last four decades, the United States has provided more than $400 billion to aid developing countries. Most U.S. aid has been coordinated by the **U.S. Agency for International Development (USAID)**, which is part of the U.S. State Department. Its mission is

1. to further America's foreign policy interests in expanding democracy and free markets, and
2. to improve living standards in the developing world.

USAID concentrates primarily on health, education, and agriculture. It provides both technical assistance and loans.

Foreign aid is a controversial, though small, part of the federal budget. In the last decade, official U.S. aid has been less than 0.2 percent of U.S. GDP, compared to an average of 0.3 percent of GDP in aid given by other advanced industrial nations.

Does Foreign Aid Promote Economic Development?

In general, foreign aid provides additional purchasing power to the country that receives it. It's not clear whether foreign aid *adds* to national saving in the recipient country, thus increasing investment, or simply *substitutes* for national saving, thereby increasing consumption rather than investment.

What is clear is that foreign aid often benefits not so much the poor as government officials, who decide how to allocate the funds. More than 90 percent of the funds distributed by USAID has been dispersed by local governments. There is reason to believe that much of this aid has been diverted from its intended purpose by government officials in recipient nations.

Much bilateral funding is tied to purchases of goods and services from the donor nation, and such programs can

NET Bookmark

Access the International Monetary Fund's web site through thomsonedu.com/school/econxtra. Click on Country Info in the green banner, and then click on the same country you researched for Net Bookmark in Lesson 19.1. Read several articles about the IMF's involvement in that country. Then write a paragraph describing that involvement.

thomsonedu.com/school/econxtra

sometimes be counterproductive. For example, in the 1950s, the United States began the Food for Peace program, which required recipient nations to purchase food from the United States. Although this helped sell U.S. farm products abroad, it did little to help these nations develop their own agricultures. It also did not help them to become less dependent on imported food. Worse yet, the availability of low-priced food drove down farm prices in the developing countries, hurting farmers there.

Foreign aid may have raised the standard of living in some developing countries. However, it has not necessarily increased their ability to become self-supporting at that higher standard of living. Many countries that receive aid are doing less of what they had done well. Their agricultural sectors have suffered. For example, per capita food production in Africa has fallen since 1960. Much of this decline is the result of civil wars, the HIV/AIDs epidemic, the end of colonization, and government corruption.

Because of disappointment with the results of government aid, the trend is now towards channeling funds through private nonprofit agencies such as CARE. More than half of all foreign aid now goes through private channels. The privatization of foreign aid matches a larger trend toward privatization of state enterprises around the world. This important development is discussed later in this chapter.

✓ CHECKPOINT

What has been the impact of foreign aid on economic development?

Span the Globe

Cat-and-Mouse Games with Trade Restrictions

Many countries impose trade restrictions in the form of quotas or tariffs on goods that come into their country. These restrictions insulate domestic producers of the same goods from international competition. Sometimes this can lead to a trade war, in which one country responds to another's trade restrictions by imposing restrictions of its own. For example, in late 2005, Canada imposed a tariff on American corn. The action was in response to U.S. tariffs on Canadian softwood products. In addition to the dangers of trade wars, enforcing trade restrictions can be expensive, requiring more than 40,000 customs officials operating border checks at hundreds of U.S. points of entry. Some foreign producers and shippers find creative ways to get around trade restrictions. For example, because Nepal was not subject to a U.S. clothing quota but India was, Indian manufacturers would ship clothing to the United States through Nepal. To get around U.S. quotas on sugar imports, Brazil exports molasses to Canada, where it is then is brought into the United States without a quota. The higher the tariffs and the stricter the quotas, the more incentive foreigners have to work around them.

THINK CRITICALLY

Why is it difficult for countries to enforce the quotas or tariffs they impose on imports from certain countries?

Source: Vito Pilieci, "U.S. Corn Hit with Tariff in Latest Trade War," *Ottawa Citizen*, December 16, 2005.

Assessment 19.2

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Key Concepts

1. In the 1980s, many U.S. automobile manufacturers introduced smaller, more fuel-efficient cars to compete with the flood of small Japanese cars that many consumers were buying. Was this an example of import substitution? Explain your answer.
2. How may developing countries be both harmed and helped when their people migrate to industrial market economies to obtain employment? Does this depend on whether a migrant is a skilled professional or an unskilled worker?
3. If the United States sent every person in a developing country enough food to eat for free, what would happen to farmers in that country? Why can foreign aid be a mixed blessing?
4. Why do some leaders in developing countries argue that the most effective aid they could receive would be a guarantee from industrial market economies that they will purchase imports from these countries at prices that allow their producers to earn a profit?

Graphing Exercise

5. The United States provides foreign aid through grants and loans to many developing countries. The amount given, however, is not constant or equally distributed among nations or regions. Construct a multiple bar graph using data in the table to show how U.S. foreign assistance was provided between 1994 and 2003. What reasons can you think of that might explain changes in how this aid was awarded?

U.S. Foreign Assistance Provided Through Grants and Loans, 1994–2003
(Values in millions of dollars)

Region	1994	1996	1998	2000	2003
Africa	$2,031	$1,957	$1,366	$1,033	$2,781
Near East & South Asia	$7,042	$7,666	$5,045	$7,669	$9,811
Eastern Europe	$2,910	$1,957	$1,790	$1,818	$1,267
Western Hemisphere	$1,005	$ 511	$1,033	$1,167	$ 639

Source: *Statistical Abstract of the United States*, 2006, Table 1284.

Think Critically

6. **History** After World War II, the United States provided about $80 billion worth of assistance (in 2006 dollars) through the Marshall Plan to help the nations of Western Europe rebuild from the war. This effort was a great success. Between 1948 and the end of 1952, the nations of Western Europe increased their collective GDPs by well over 100 percent. What advantages did these nations have in rebuilding that are not shared by developing countries today?

19.3 Rules of the Game, Transition Economies, and Convergence

Objectives

- Assess the impact of a nation's physical infrastructure and rules of the game on its economic development.
- Discuss why many command economies are trying, with difficulty, to introduce market forces.
- Explain convergence theory, and discuss why the reality has not yet matched the theory's prediction.

Overview

Economic systems are classified based on the ownership of resources, the way resources are allocated to produce goods and services, and the incentives used to motivate people. Laws regarding resource ownership and the role of government in resource allocation determine the "rules of the game"—the incentives and constraints that guide the behavior of individual decision makers. Resources in command economies are owned mostly by the government and are allocated by central planners. Resources in market economies are owned mostly by individuals and are allocated through market coordination. Regardless of the economic system, economic development depends on establishing a trusted, reliable, and fair framework for productive activity.

Key Terms

physical infrastructure

soft budget constraint

privatization

convergence theory

In the News

Bureaucracy and Corruption Slow Exports

Developing countries want to be able to export their agricultural products to the world's richest nations. But these rich nations often shelter their own farmers from foreign competition. This is only part of the developing countries' problem. Poorer countries worldwide often are plagued by excess bureaucracy and corruption. For example, bananas picked in the Central African Republic need 116 days and 38 signatures just to reach a ship bound for the United States or Europe. The average for all Sub-Saharan exporters in Africa is 50 days according to a report issued by the World Bank. Up to nine different customs forms and about 20 signatures are required on average. To export from India requires 22 signatures on ten forms, and Brazilian produce exporters need 39 days just to get their products on board a ship. In comparison, U.S. exports reach their ships in just nine days. With a relatively small technological investment, plus bureaucratic reforms and reduction in corruption, developing countries could boost their farmers' global competitiveness.

THINK ABOUT IT

Should developed countries insist that developing countries improve their infrastructure and reduce red tape before cutting trade barriers? Why or why not?

Sources: Tim Harford, "Yes, We Have Bananas. We Just Can't Ship Them," *New York Times*, December 16, 2005.

Infrastructure and Rules of the Game

Key ingredients for economic development that have not yet been discussed are the physical infrastructure and rules of the game that support the economic system. Whether the system involves central planning or competitive markets, all economies rely on a stable and supportive institutional framework.

Physical Infrastructure

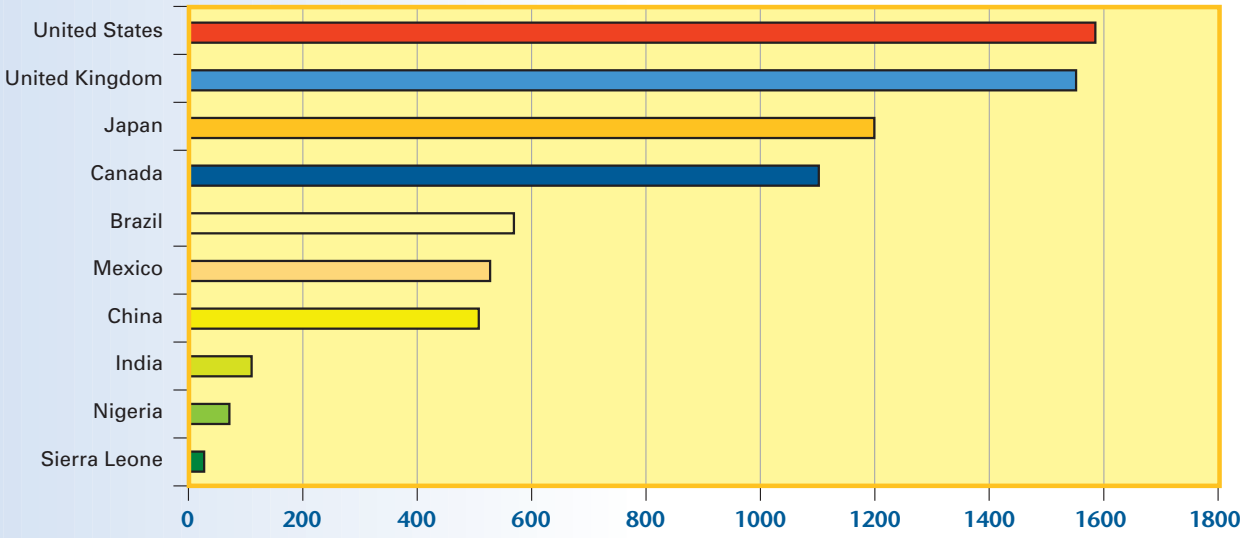
physical infrastructure
Transportation, communication, energy, water, and sanitation systems provided by or regulated by government

Production and exchange rely on the economy's **physical infrastructure**, which are transportation, communication, energy, water, and sanitation systems provided by or regulated by government. Roads, bridges, airports, harbors, and other transportation facilities are vital to production. Reliable mail and phone service along with a steady supply of electricity and water also are essential for advanced production techniques. Imagine how difficult it would be to run even a personal computer if the supply of electricity and phone service was continually interrupted, as is often the case in developing countries.

Investigate Your Local ECONOMY

Think about the physical infrastructure in your area. List the infrastructure categories mentioned in this section on the left side of a sheet of paper. On the right side, place a plus sign (+) next to the categories that seem to be working efficiently and a minus sign (−) next those that seem to need some attention. For the categories you think need attention, research to find out if the local, state, or federal government has any plans underway for improvement. If they do, write a paragraph describing these plans. If not, write a letter to a political leader describing the problem and asking for their office's help in solving it.

Fixed and Mobile Telephone Lines Per 1,000 Population by Country in 2005 — Figure 19.3

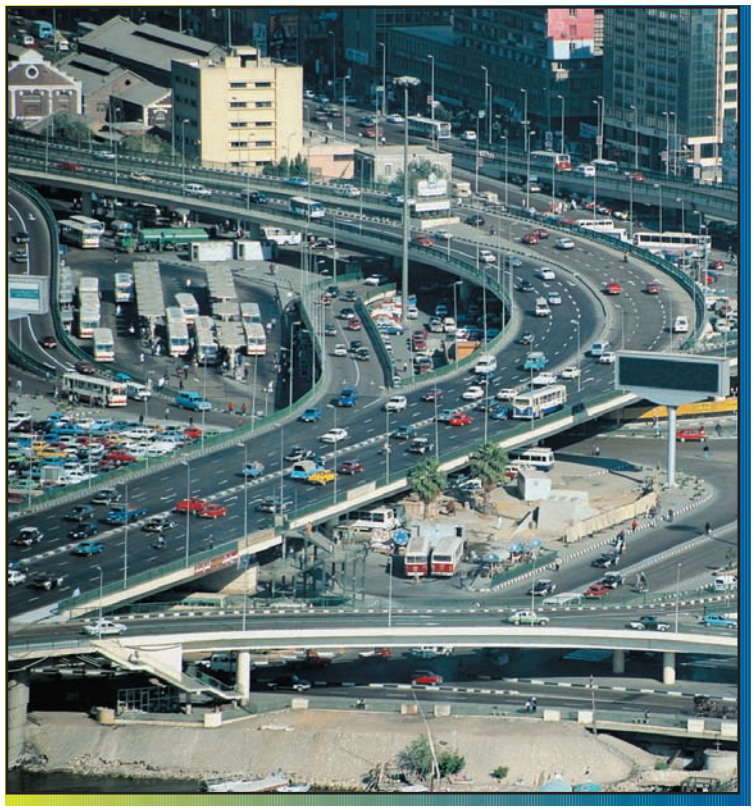


Many developing countries have serious deficiencies in their physical infrastructures.

Source: Data compiled based on estimates for fixed and mobile telephones and for populations from *The World Factbook 2006,* from the Central Intelligence Agency, available at www.cia.gov/cia/publications/factbook/index.html.

Many developing countries have serious deficiencies in their physical infrastructures. As just one measure of that infrastructure, Figure 19.3 shows the number of fixed and mobile telephone lines per 1,000 population in 2005 for the 10 countries examined earlier. Note how much greater is the number in the top four countries—which are industrial market economies—compared with the bottom six countries, which are developing economies. The United States, the top-rated in this category, had 1,580 phone lines per 1,000 people. Bottom-ranked Sierra Leone had only 23 phones lines per 1,000 people.

Worse still for the infrastructure, some of the poorest countries in Africa have been ravaged by civil war, internal political strife, and government corruption. For example, civil war raged in Sierra Leone for more than a decade. In Sudan, civil war has lasted two decades. Wars kill people and destroy bridges, roads, electrical systems, water works, schools, and other vital infrastructure.



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In the past four years, Egypt has been spending much of its budget on national infrastructure projects. In what ways can this highway system benefit Egypt's economy?

Rules of the Game

Reliable and trusted rules of the game also are important for economic development. Recall that the rules of the game are the formal and informal institutions that promote production incentives and economic activity. They include the laws, customs, conventions, and other social and political elements that encourage people to undertake productive activity.

On the *formal* end of the spectrum, rules of the game include a country's codified rules and laws, along with the system for establishing and enforcing those rules and laws. On the *informal* end of the spectrum, rules of the game include the customs and informal mechanisms that help coordinate production.

Rules of the game are vital for economic development. When operating properly, they allow people to work, spend, and save to build a better future for themselves and their families. When they are weak, corrupt, or operate unfairly, people lack confidence in the economic system. Weak or corrupt rules of the game also encourage people to "take" rather than "make." This means they may find it easier to steal what others created, rather than to produce something of value themselves. When taking becomes more attractive than making, total production declines and average incomes fall.

Better incentives can boost productivity and improve the standard of living. For example, a more stable political climate promotes investment in the economy. Conversely, destabilizing events such as wars and terrorist attacks discourage investment, harm productivity, and reduce the standard of living.

✓CHECKPOINT

What is the impact of a nation's physical infrastructure and rules of the game on its economic development?

ETHICS IN ACTION

Corruption Hinders Production and Trade

The results of a recent opinion survey of business executives from over 6,000 firms in more than 100 countries conducted by the World Economic Forum point to the growing impatience with government and private sector corruption. Such corruption was identified as one of the major obstacles to corporate operations. Such a negative view of corruption was not always the perspective. Grease payments (small bribes paid officials to ease the delays of government or company bureaucracy) were once thought to be ways to improve efficiency. For example, in 1977, while the United States was making bribery of foreign officials a criminal offense, France actually authorized bribery to be paid to foreign civil servants, calling the payments "commissions." France's attitude, and the attitude toward bribery worldwide, has since changed. In fact, lately it has been recognized that bribery in this form tends to encourage public officials to create new bureaucratic regulations as a way of generating more bribes to circumvent them. More significantly, the World Bank reported that more than $1 trillion is paid in bribes each year around the world. Bribes represent a substantial drag on the economies of developing countries. As a consequence, not only are business executives fed up with the counter-productive nature of the payments, but some governments have recently committed to end them by signing the U.N. Convention on Anti-Corruption in 2003.

THINK CRITICALLY

Do you think paying small bribes to expedite government action is ethical? Why or why not?

Source: "The Cost of Corruption," *Africa News,* March 18, 2005.

Economies in Transition

From the breakup of the Soviet Union to China's move toward freer markets, markets are replacing central plans in countries around the world The attempt to replace central planning with markets is one of the greatest economic experiments in history. Economists involved in structuring the transition from central planning to market systems are learning as they go.

Prices and Profit in Command Economies

Most prices in command economies are established not by market forces but by central planners. Once set, prices tend to be inflexible. As a result, consumers have little say in what's produced. Consumer goods often are priced below the market-clearing level, so shortages are common. For example, just prior to the collapse of the Soviet Union in 1991, the price of bread had not changed since 1954. That price amounted to only 7 percent of bread's production cost. Some rents had not changed in 60 years. Thus, prices had little relation to supply and demand, and shortages were common.

Evidence of shortages of consumer goods included long waiting lines at retail stores. Shoppers in the former Soviet Union sometimes would wait in line all night and into the next day. Consumers often relied on "connections" through acquaintances to obtain many goods and services. Scarce goods were frequently diverted to the black market, where prices reflected market conditions and were much higher.

Prices did not allocate products very well in command economies. To make matters worse, state enterprises faced little pressure to cover costs. With central planning, any "profit" earned by a state enterprise was appropriated by the state. Any "loss" was covered by a state subsidy. Thus, covering costs was not important for a state enterprise. Such

enterprises face what has been called a **soft budget constraint**. Managers could ignore market forces, could allocate resources inefficiently, and could make poor investment decisions—yet still survive year after year.

Privatization

One necessary step in the move from a command economy to a market economy is **privatization**, which is the process of turning government enterprises into private enterprises. It is the opposite of *nationalization*, which is turning private enterprises into government enterprises.

The problem is that most command economies that are trying to privatize have no history of market interaction. They also have no established record of codified law or rules of conduct for market participants. For example, Russian privatization began in 1992 with the sale of municipally owned shops. Most property in countries of the former Soviet Union was owned by the state. Thus, it often remained unclear who had the authority to sell the property and who should receive the proceeds from the sale. This uncertainty resulted in cases in which different buyers purchased the same property from different public officials. Yet there was no clear legal process for resolving title disputes to establish property rights. Russia did not have a reliable legal system.

Worse still, self-serving managers stripped some enterprises of their assets. The process of privatization does not work well when the general population perceives it to be unfair.

Thus, establishing a market system is easier said that done. Economists involved in structuring the transition from central planning to market systems are learning as they go. Many command economies have little experience with laws and customs that are trusted, reliable, and fair.

✓ CHECKPOINT

Why are centrally planned economies trying to introduce market forces, and what has been slowing down the process?

Are the World's Economies Converging?

Given enough time, will poor countries eventually catch up with rich ones? The **convergence theory** argues that developing countries can grow faster than advanced ones and should eventually close the gap.

Reasons for Convergence

Countries that are far behind economically can grow faster by copying new technology. It is easier to copy new technology once it is developed than to develop that technology in the first place. Advanced economies, which are already using the latest technology, can boost productivity only with a steady stream of technological breakthroughs.

Advanced countries, such as the United States, find their growth limited by the rate of creation of new knowledge and improved technology. Follower countries can grow more quickly by, for instance, adding computers where they previously had none. For example, the United States makes up just 5 percent of the world's population. But in 1995, Americans owned most of the world's personal computers. By 2001, most PC purchases were outside the United States.

Not Much Convergence

What is the evidence for convergence? Some poor countries have begun to catch up with richer ones. For example, the newly industrialized Asian economies of Hong Kong, Singapore, South Korea, and Taiwan have invested heavily in technology and in education. These Asian Tigers have moved from the ranks of developing countries to the ranks of industrial market economies.

The Asian Tigers are more the exception than the rule. Among the nations that make up the poorest third of the world's population, consumption per capita has grown by an average of only about 1.0 percent per year during the

soft budget constraint

In command economies, the budget condition faced by state enterprises that are subsidized when they lose money

privatization

The process of turning public enterprises into private enterprises

convergence theory

A theory predicting that the standard of living in economies around the world will grow more similar over time, with poorer countries gradually closing the gap with richer ones

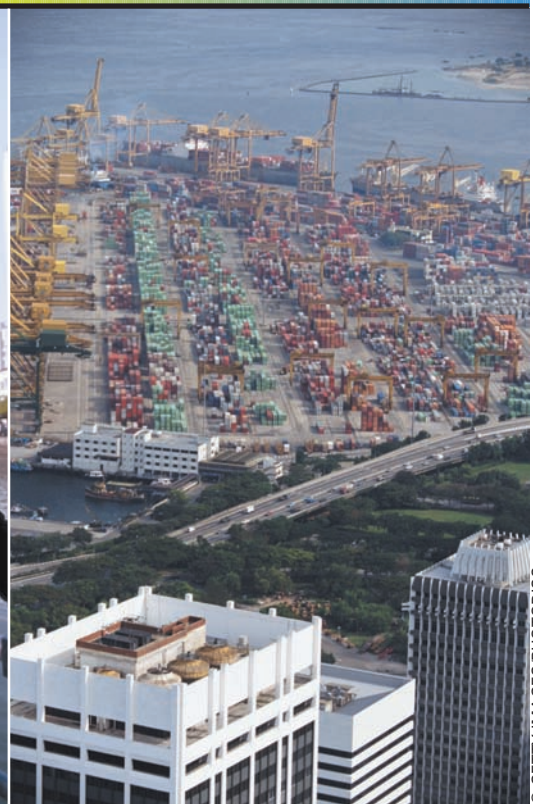
Main Idea

Growth

Singapore, one of the so-called Asian Tigers, is a highly developed and successful free market economy. *Due to investments in factories, machinery, new technology, and the health, education, and training of people, the population of Singapore enjoys a high standard of living.* The country boasts one of the highest per capita GDPs in the world. Singapore is an island country. How has this helped Singapore to successfully develop its economy?



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last two decades, compared with a 2.5 percent average growth in the rest of the world. Therefore, while the standard of living in the poorest third of the world has improved, that living standard has fallen further behind the rest of the world.

Higher Birth Rates and Less Human Capital

One reason per-capita consumption has grown so slowly in the poorest economies is that birth rates there are double those in richer countries. Therefore, poor economies must produce still more just to keep up with a growing population. Another reason why convergence has not taken hold, particularly for the poorest third of the world, is the vast difference in the amount of human capital across countries. Whereas technology is indeed portable from industrial economies to developing economies, the knowledge, skill, and training usually required to take advantage of that technology are not portable.

Some poor countries, such as most of those in Africa, simply do not have the human capital needed to identify and absorb new technology. Consider personal computers. Figure 19.4 shows the number of personal computers per 1,000 people for the 10 nations examined earlier. Notice how many more PCs the top four countries, which are industrial market economies, have than the bottom six, which are developing economies. The United States had 660 PCs per 1,000 people. Sierra Leone had only two per 1,000 people. There is a clear digital divide between industrial and developing economies.

As already noted, poor economies tend to have low education levels and high illiteracy rates. Those who get a

good education often migrate to richer economies. This is part of the brain drain, discussed earlier.

Most developing countries lack the stable institutions needed to nurture economic development. Many developing countries have serious problems with their infrastructures. For example, they may lack a reliable source of electricity needed to power new technologies. Some of the poorest nations have been ravaged by civil war for years.

Reasons for Optimism

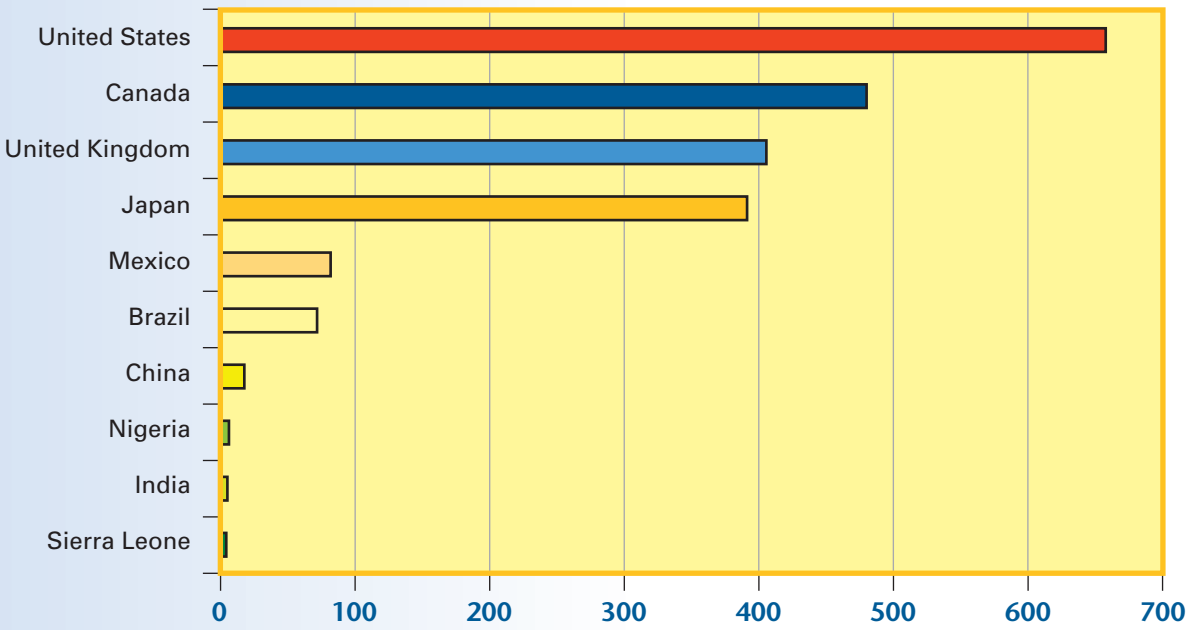
Despite all that, working conditions in most poor countries are improving, thanks to greater trade opportunities and pressure from international bodies such as the World Trade Organization. For example, Cambodia is extremely poor, but the highest wages in the country are earned by those working in the export sector. This tiny group makes products for companies such as Nike and Gap. Though pay is low by U.S. standards, workers in the export sector earn more than twice what judges and doctors average in Cambodia. Child labor is still a problem in poor countries, but most children work on family farms. Because of world pressure on global manufacturers, fewer and fewer children are working in factories.

The reduction in trade barriers resulting from the Uruguay Round, the latest completed round of trade negotiations, is projected to boost world income by more than $500 billion per year. This amounts to an increase of about $400 for each household on Earth. That payoff may not impress those who object to greater globalization through freer trade, but for households in poor countries, it can be a lifesaver.

✓ CHECKPOINT

What does the convergence theory predict, and why hasn't the reality yet matched that prediction?

Personal Computers Per 1,000 Population by Country in 2003 — Figure 19.4



Some poor countries simply do not have the human capital needed to identify and absorb new technology.

Source: Figures from *Statistical Abstract of the United States,* 2006, Table 1364, which can be found at www.census.gov/prod/www/statistical-abstract.html. Figures for Nigeria and Sierra Leone are estimated based on earlier figures.

Assessment 19.3

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Key Concepts

1. Choose a business in your community that employs many workers. How would this business be affected if suddenly there were no local roads and bridges, electric power, telephone service, water supplies, and waste removal services? Why is a country that lacks basic physical infrastructure unlikely to have a comparative advantage in manufacturing?
2. Many developing countries have created laws to regulate the production of goods and services. Regardless of this fact, many businesses in these nations largely ignore these laws and carry out production as they choose. What do these nations need in addition to their laws? Explain your answer.
3. Why do people who live in nations that once had government ownership and control of businesses often find it difficult to operate in a competitive market economic system?
4. Will giving individuals the right to own and operate businesses without government interference guarantee a nation's smooth transition from a command economy to a free market economy? Why or why not? What other conditions need to be created for this to take place?
5. Some people think that investments made in developing countries by businesses from industrial market economies help the developing nations improve in terms of their production and standards of living. Others think that this investment will not lead to a material improvement in the lives of these people. Which of these points of view do you think is nearest to the truth? Explain your answer.

Graphing Exercise

6. U.S. businesses invest billions of dollars every year in developing countries. Draw a line graph showing the total accumulated value of U.S. investments in Latin America in the years from 1999 through 2004. Why do businesses make these investments? How do such investments benefit people in Latin America?

Value of Total U.S. Direct Investments in Latin America, 1999–2004 (Values in millions of dollars)

Year	Value of Total U.S. Direct Investments in Latin America
1999	$253,928
2000	$266,576
2001	$279,611
2002	$289,413
2003	$300,690
2004	$325,891

Source: *Statistical Abstract of the United States*, 2006, p. 827.

Think Critically

7. **Sociology** You have learned that poverty in the United States is frequently found in households led by single parents. These households often include many young children. In what ways are the problems of these households in the United States similar to those faced by people who live in developing countries? In what ways are their problems different?

CONNECT TO **HISTORY**



Tariffs and Trade, Part II

The Reciprocal Trade Agreement Act of 1934 and its 12 extensions through 1962 ushered in an era of tariff reductions worldwide. The Act authorized the U.S. president to negotiate lower tariffs and give nations "most favored nation status."

In 1947, following World War II, 23 nations negotiated the General Agreement on Tariffs and Trade (GATT). The goal of this agreement was to encourage nations to lower tariffs and other trade barriers. For the United States, lowering tariffs also had a foreign-policy component of helping to rebuild Europe and develop poor nations. While the general principle is for a country to treat all members equally, some exceptions were allowed for developing countries to protect necessary industries. A "no injury" clause limited the impact of tariff reductions if they were determined to have a negative effect on domestic industries. GATT also allowed for free-trade areas to be created, such as the European Community and the North American Free Trade Agreement (NAFTA). The first five trade agreements, or "rounds," were characterized primarily by countries negotiating an agreement on a product for tariff reductions. They would then apply the agreement to all members on a "most favored nation" basis.

During the 1964 Kennedy Round, the United States proposed across-the-board reductions to the 62 member nations. The negotiations, which lasted three years, focused on deciding what items to include. Success was obvious as average tariff rates, at 47 percent in 1947, dropped to 9 percent in 1972, and to 4 percent in 2003. Following the Kennedy Round, discussions began to focus more on non-tariff barriers, such as dumping, subsidized exports, and other exclusionary practices. Most industrialized nations agreed to the provisions that were resisted by developing countries.

By the Uruguay Round (1986–1994), membership in GATT had grown to 123 countries. This round led to the creation of the World Trade Organization (WTO). The WTO now has about 150 members, accounting for more than 97 percent of the world's trade. Fifty additional nations are now negotiating membership.

The WTO operates principally under the rules formed by GATT. Documentation of those rules runs to 50,000 pages and incorporates 30 agreements, called schedules. WTO decisions are not put to a vote. In fact, voting rarely was used under GATT. Decisions typically are made by consensus, and then agreements are ratified by member-country legislative bodies.

The system allows countries to bring disputes to the WTO if they believe that their rights or agreements are being infringed. The organization encourages disagreements to be settled by consultation. Since 1995, the WTO has reviewed more than 300 cases before it. This exceeds the number dealt with by GATT from 1947 to 1994.

With 75 percent of its membership consisting of developing countries, the WTO faces huge challenges. The latest round of negotiations (the Doha round, begun in Doha, Qatar, in 2001) was still underway in 2007. During that round of negotiations, developing countries, which typically depend on agriculture for a large portion of their exports, were asking for the elimination of export subsidies. The agricultural sectors in industrialized nations, however, rely on these subsidies to stay afloat. Therefore, ending export subsidies on agricultural goods is politically difficult for industrialized countries.

THINK CRITICALLY

Given a world economy, do you think a country can both promote free trade and protect its domestic industries at the same time? What would be the advantages to a country of doing both?

19 Chapter Assessment

Summary

19.1 Developing Economies and Industrial Market Economies

a Countries may be classified in a variety of ways based on their levels of economic development. *Developing countries* have lower levels of GDP per capita income and higher rates of illiteracy, unemployment, underemployment, and rapid population growth than *industrial market countries.* People in developing countries also have shorter average life expectancies and higher birth rates.

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b Developing countries suffer from low labor productivity. Workers often lack skills and basic education. Income per capita is low and does not allow individuals to save to make investments in human and physical capital.

c Developing countries have fewer entrepreneurs who are able to bring together resources and take the risks necessary to develop new and more efficient means of production.

19.2 Foreign Trade, Foreign Aid, and Economic Development

a Developing countries have used many techniques to try to speed their economic growth. One method is *import substitution*. This policy places barriers on specific types of imported products that are targeted to be replaced with domestic production. Domestic producers then are able to sell products in a proven market without foreign competition. Another method used to speed growth is *export promotion*. Under this policy, a government encourages production of goods targeted for the export market.

b Many people who live in developing countries move to *industrial market economies* each year. This allows them to earn greater incomes, some of which they send home. When skilled workers migrate, however, they are no longer able to contribute to production in their native lands. This movement of skilled workers has been called the *brain drain*.

c Industrial market economies have attempted to assist developing countries through various programs that encourage investment in human and physical capital. *Foreign aid* has been extended through *bilateral* agreements, which are between individual countries, and through *multilateral* organizations. Over the past 40 years, the United States has given more than $400 billion in assistance to developing countries. Most of this aid was coordinated by the *U.S. Agency for International Development (USAID)*. Foreign aid provides additional purchasing power in developing countries. There is, however, a question about its effectiveness.

19.3 Rules of the Game, Transition Economies, and Convergence

a For a country to produce goods and services efficiently and to experience economic growth, its economy must provide businesses with both a *physical infrastructure* and a stable environment in which to operate. Many developing countries lack sufficient roads, bridges, airports, harbors, and other transportation facilities. They do not have reliable mail, phone service, or steady supplies of electricity, water, and other necessary services.

b Political stability is a necessary component for production and growth. Entrepreneurs will not work to expand production if they believe their investment will be taxed excessively, appropriated by government, stolen by thieves, destroyed by civil unrest, or blown up by terrorists.

c Inefficiencies in command economies led most to convert to market-based economies. However, *privatization*, converting government enterprises to private enterprises, does not necessarily mean that these new owners have the entrepreneurial skills needed to run them efficiently.

d Some economists and politicians believe that poor economies will eventually catch up with rich economies—a theory called *convergence*. A reduction in trade barriers, increased international investments, and a spread of technology and education may allow many to escape poverty in the future.

Review Economic Terms

Choose the term that best fits the definition. On separate paper, write the letter of the answer. Some terms may not be used.

_____ **1.** The process of turning public enterprises into private enterprises

_____ **2.** Development aid from one country to another

_____ **3.** Nations with low GDP per capita, high rates of illiteracy, high unemployment, and high fertility rates

_____ **4.** Transportation, communication, energy, water, and sanitation systems provided by or regulated by government

_____ **5.** Development aid from an organization, such as the World Bank, that gets funds from a group of countries

_____ **6.** A developing country's loss of educated migrants to industrial market countries

_____ **7.** The average number of births during each woman's lifetime

_____ **8.** Economically advanced market countries of Western Europe, North America, Australia, New Zealand, and Japan

_____ **9.** A development strategy that concentrates on producing for the export market

_____**10.** A development strategy that emphasizes domestic manufacturing of products that are currently imported

a. bilateral aid
b. brain drain
c. convergence theory
d. developing countries
e. export promotion
f. fertility rate
g. foreign aid
h. import substitution
i. industrial market countries
j. multilateral aid
k. physical infrastructure
l. privatization
m. soft budget constraint
n. U.S. Agency for International Development (USAID)

Review Economic Concepts

11. True or False *Developing countries* typically have low GDP per capita, high rates of illiteracy, high unemployment rates, and rapid population growth.

12. *Developing countries* are likely to have each of the following except

a. a limited physical infrastructure.

b. few educational opportunities for students.

c. easy access to high-quality medical care.

d. a low savings rate.

13. A country's __?__ is the average number of children born during each woman's lifetime.

14. True or False Countries with low life expectancies also have high child mortality rates.

15. People in *developing countries*

a. are all equally poor.

b. vary in their degree of poverty.

c. are able to support their families because their prices are low.

d. are provided with free medical care by their governments.

16. Countries that use tariffs or quotas to encourage the production of products that were formerly imported are following a policy of __?__.

17. **True or False** Like all protection measures, *export promotion* reduces the gains from specialization and comparative advantage.

18. Farms in *developing countries* are often inefficient for each of the following reasons except
    a. they are too small to be efficient.
    b. they lack tools and fertilizer that could make them more efficient.
    c. the farmers do not work hard enough to be efficient.
    d. the farmers do not employ the latest technology.

19. When skilled workers leave developing countries to find employment in industrial market countries, there is a(n) __?__.

20. Foreign assistance extended by one nation to another nation is called
    a. bilateral aid.
    b. unilateral aid.
    c. multilateral aid.
    d. quadrilateral aid.

21. Most U.S. assistance provided to developing countries in the past 40 years has been coordinated by the __?__.

22. Which of the following is an example of *physical infrastructure?*
    a. savings used to purchase machinery
    b. land upon which crops are grown
    c. roads upon which products are moved
    d. good weather that helps crops to grow

23. **True or False** For rules to be effective in regulating production, they must be written into laws.

24. __?__ in command economies allows inefficient producers to continue to operate over long periods of time, even when their costs were greater than the income they received from products they sold.

25. In the past decade, there has been
    a. a steady convergence of the world's economies.
    b. little evidence that the world's economies are converging.
    c. a narrowing of gaps in productivity among all the world's countries.
    d. no growth in productivity by any of the world's developing countries.

Apply Economic Concepts

26. **Evaluate the Cost of Education** In many of the world's poorest countries, nearly 50 percent of the population is under 15 years of age. If these people are to help improve the productivity of their economies, they must be trained in modern methods of production. In 2000, just over 4 million of the 8.8 million people of Chad were under 15. Explain why it would be difficult for many of these children to be educated and become productive members of a growing economy.

27. **Determine the Best Type of Aid** Imagine that you have been given control of the USAID program. You have the power to decide how to use the funds provided to this organization by the U.S. government. Unfortunately, there is a limit to what you can spend, and there are many nations that need assistance. You have allocated $20,000,000 to a developing country. These funds may be spent to do any of the following. How would you spend this money to do the most good? Explain your choice.
    - Spend the money to provide better education for 20,000 students.
    - Spend the money to provide better health care for 200,000 people.
    - Spend the money to purchase better farm equipment for 10,000 farmers.
    - Spend the money to build a highway that leads to the country's only port.
    - Spend the money to provide 1,000,000 people with better nutrition.

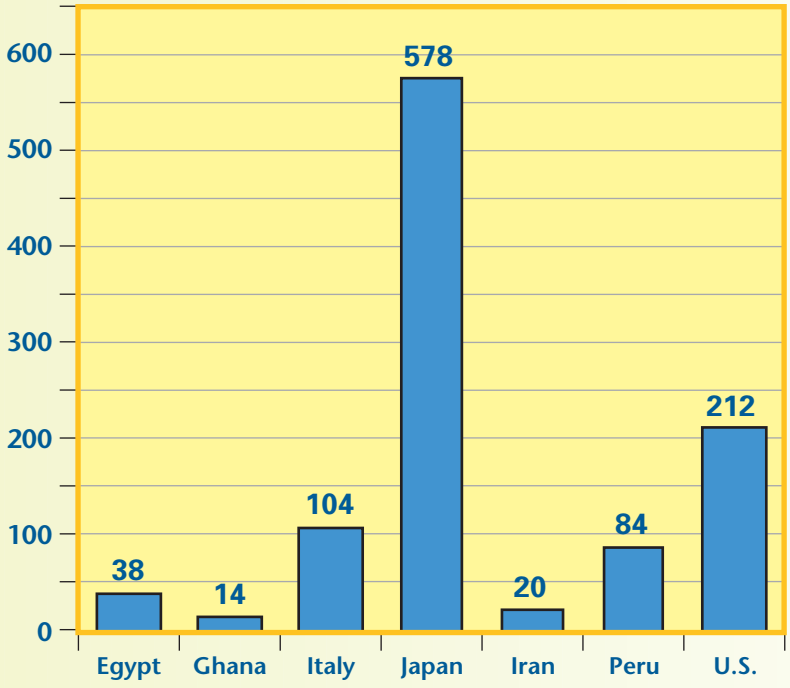
28. **Encourage Foreign Investment** Imagine you have been put in charge of a developing country's Office of Economic Growth. Your job includes setting policies intended to encourage foreign businesses to invest in your country and provide jobs to your people. Which of the following policies would you

support? Which would you oppose? Explain your answers.

- Allow foreign firms to pay any wage rate that your people are willing to accept. Have no required minimum wage, overtime pay, or days off.
- Assure foreign firms that their investment will not be nationalized by the government.
- Provide foreign firms with reduced tax rates
- Allow foreign firms to ignore pollution control laws
- Pass laws that make it illegal for workers to go on strike against foreign firms

29. Sharpen Your Skills: Analyze Visuals Study the graph below and evaluate the information it provides about newspaper sales. How does it show which countries are still developing and which are established industrial market economies?

Daily Newspaper Circulation Per 1,000 Residents



Source: *Statistical Abstract of the United States*, 2002, p. 852.

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30. Access **EconNews Online** at thomsonedu.com/school/econxtra. Read the article entitled "Grading the IMF and World Bank." According to the article, the IMF and the World Bank are being pushed to provide grants instead of loans. What arguments are made for this position?

Unit 7



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Personal Financial Literacy

20 Consumer Responsibilities and Protections

21 Managing Your Money

This final unit will show how the knowledge you have gained so far about the economy can benefit you, your family, and your community. The focus is on how making wise consumer choices will help boost your satisfaction. You will learn about the rights and responsibilities of American consumers and how government tries to protect these rights. Methods to monitor and control your spending and saving will be presented, and their advantages explained. You also will consider a variety of ways to invest your savings. By investing carefully, you may earn a return that will help you achieve some of your most important life goals.

20 Consumer Responsibilities and Protections

20.1 Consumer Choice

20.2 Using Credit Responsibly

20.3 Consumer Protection



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CONSIDER

How does it feel when your wallet is empty on Wednesday and you don't get paid until Friday?

What's the downside to buying an expensive sports car you can't really afford?

Where can you turn for information about things you want to buy before you buy them?

How do you decide when a sales clerk asks, "Will that be cash or charge?"

If an offer seems too good to be true, is it?

Would you pay a premium for fashionable clothing without shopping around for it?

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20.1 Consumer Choice

Objectives

- Understand the importance of setting personal financial goals.
- Describe how making wise spending decisions helps consumers achieve their goals.

Overview

Every day you consume a wide variety of goods and services that might range from breakfast cereal, to shampoo, to gasoline for your family's car. Most of these products are things that you, or some other member of your family, bought. When you purchase goods and services, you seek the greatest satisfaction possible from your income. One of the best ways to achieve this goal is to create a budget that sets priorities about how to spend and save your income. By following a budget, you will be better able to achieve your life goals.

Key Terms

consumer

personal finance

budget

comparison shopping

rational consumer choice

In the News

Palm Readers Aid War on Terror

No, the United States is not deploying a regiment of psychics to interpret the lines in your palm to see if you are prone to violence. The "palm readers" referred to here are the second generation of a product that won the 2006 Consumer Electronics Show "Best of Innovations" Award for Biometrics. Using a small reader that can connect to a computer through a USB port, the device scans the extremely difficult-to-forge internal veins in the subject's hands and compares them to a database for verification. The palm reader is easily transportable, fast, quite versatile, noninvasive, and has an extremely low error rate. The device seems ideal for solving the problems encountered in high-population-density, high-security areas. The first generation of the device already is in use at more than 10,000 locations in Japan. At banks, ATMs, private homes, cars, hospitals, pharmacies, and in a multitude of other applications throughout that country, the devices have proven invaluable in maintaining security.

THINK CRITICALLY

What problems do you foresee with the use of this and similar fast and accurate identity-verification products?

Sources: "Palm Vein Biometric Authentication Device," PR Newswire Association, May 9, 2006; Mike Urban, "Hand Over Your License, Surrender Your Identity," Knight/Ridder Tribune News Service, May 3, 2006.

Personal Financial Goals

consumer
Anyone who uses a good or service

Everyone is a **consumer**. Each time you eat your dinner, ride a school bus, watch television, or turn on your lights, you consume. Any use of a good or service is an example of consumption. Your family may not pay directly for your education, but when you attend school you are consuming an educational service. People consume within the limits of their resources. For most persons, these limits are determined by the time they have available and the amount of money they have to spend. People allocate scarce resources when they make consumer choices that are intended to maximize the satisfaction they achieve in their lives.

Think about the things you would like most to accomplish in your life. Possible goals may include completing your education, pursuing a rewarding career, owning a nice home, getting married and having children, or traveling to a foreign country. Your personal goals may be different from these, but it is likely that you have goals or have thought about them. To achieve your goals, you will need to make many choices, and most of them will require you to choose how best to spend your money.

There is a limit to the amount of income anyone receives. Even if you were a high-powered corporate executive with an annual income in the millions, you would still not be able to buy everything you would like to have. For

e-conomics

ONLINE DEGREES GAINING CREDIBILITY

Once offered only by online universities and community colleges, bachelor's and master's degrees obtained via the Internet now are available from schools such as Boston University, University of Oklahoma, Indiana University, and the University of Alabama. Long recognized as the key to economic and social advancement, a legitimate college degree in the past was almost unattainable for individuals in remote areas, military personnel, and single parents. This is not so today. However, many traditional four-year colleges are hesitant to enter the electronic off-campus age. These schools emphasize the importance of face-to-face interaction with professors. Other schools, especially ones with large on-campus class enrollments, argue that such "face time" is almost irrelevant given the size of some classes. So, even though tuition is somewhat higher per credit-hour for online degrees, enrollments are soaring. For example, at the University of Massachusetts, online enrollment has quadrupled to more than 9,200 students since 2001. Legitimacy is building as established "campus-based" online programs try to distinguish themselves from for-profit degree mills. One major downside to online degrees, however, remains their acceptance level with prospective employers. In an early-2006 study, 96 percent of the businesses responding said they would hire an applicant with a degree from a residential campus before one with a degree from a "virtual campus." In the same study, 75 percent said they would choose the residential campus applicant over one with a degree earned half online and half in residence.

THINK CRITICALLY

Would you invest your future in an online degree program? Why or why not?

Sources: Samira Jafari, "Online Programs Give Students a Shot at Degrees Away from Campus," Associated Press, November 23, 2005; Daniel Golden, "Online University Enrollment Soars," *Wall Street Journal*, May 9, 2006; Jennifer Brown, "Business Perception of Online Grads vs. Campus-based Ones," *Denver Post*, January 16, 2006.

example, you might have to give up a new swimming pool to be able to have the sails on your yacht replaced.

To achieve the greatest satisfaction in your life, you need a plan. Your plan should state the things you most want to achieve and explain the steps you intend to take to achieve them. Most of these steps will require you to spend money. Therefore, you should be sure to include a financial plan within your general life plan. **Personal finance** involves the way you plan to spend or save your income. The satisfaction you achieve in life will depend to a large extent on the quality of the financial decisions you make over time.

Setting Financial Goals

It is difficult to develop a useful financial plan if you don't know what you want to achieve. Would you be likely to set aside $10 each week from your income if you didn't know what you intended to do with the money? Would it be easier to save if you knew that you would use the money to buy a new computer next year? Choosing what you want most and setting goals is the first step in creating a financial plan.

Although you must spend money to achieve most goals, not all goals are the same. Short-term goals are things you hope to accomplish within a year or less. Long-term goals take longer than one year to achieve, while your most important life goals can take decades to reach.

Goals are related. You might set a short-term goal to save $1,500 this year to help you pay for college. Then your long-term goal of completing a degree in elementary education could help you achieve your life goal of having a career as a second-grade teacher. Along the way there will be many other goals that you will want to achieve that have little to do with your life goals. You should be very careful when you identify these additional goals. For example, buying an expensive sports car may bring you immediate gratification, but this choice is not likely to help you achieve success in a career in elementary education. This does not mean you should give up all choices that bring immediate enjoyment, but you should make sure these choices do not prevent you from achieving the things you want most in life.

Strategies for Achieving Your Financial Goals

A useful skill to develop is the ability to distinguish between things you need and things you want. In Chapter 4, you were reminded that a $130,000 Mercedes roadster probably is not something you need. You might need transportation between your home and your job, but you could satisfy this need by taking a bus or riding your bicycle. For most people, buying expensive cars, and other luxuries, are examples of satisfying wants rather than needs.

MAKE A LIST

When you consider spending part of your income for a product, you should always ask yourself these questions:

1. Do I really need this product?
2. Is this the best deal available for this product?
3. Can I afford to pay for this product?
4. Will buying this product now prevent me from buying something else I want more in the future?

If you can answer, "yes" to the first three and "no" to the last, then making the purchase probably is a good choice. If not, then you need to consider the purchase very carefully before you complete the transaction.

Ask the Xpert!

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What's the best thing you can do to increase your value as a worker?

personal finance

The way you plan to spend or save your income

NET Bookmark

You don't have to wait until you are an adult to learn how to make money with your money. Access the Young Investor web site for teens through thomsonedu.com/school/econxtra and surf the articles in "Invest It." Then click on "Play It" on the left and try a few of the puzzles based on information you read in the other section. Imagine you have $100 dollars to invest in any stock. Write a brief paragraph about what stock you would choose and why.

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SEEK EXPERT ADVICE

Another useful strategy is to seek expert advice when making important buying decisions. Many products available today are so complex that most consumers cannot really understand them. You may know how to operate your computer, but it is unlikely that you understand how it works, except in the most general way. Products are changing so rapidly that even if you knew how to evaluate a telephone service last year, your knowledge probably is now out of date. As a general rule, it is better to admit that your knowledge is limited and to rely on other people with greater knowledge to help you make your decision.

Expert advice about consumer products can easily be found in many locations. One of the most useful is *Consumer Reports*, a monthly magazine published by Consumers Union. This magazine reports on a wide variety of consumer products, including cars, clothing, cameras, and cooking oil to name only a few. Most libraries subscribe to *Consumer Reports*, or, for a fee, its articles can be found online. Consumer products also are reviewed and evaluated in magazines that include *Money, Kiplinger's Personal Finance Magazine, Popular Science, Popular Mechanics, PC,* and many others. Much of this information can be accessed on the Internet for free or for a small fee. You should be careful though, because anyone can place anything on the Internet, regardless of its accuracy.

ASK OTHER PEOPLE

Asking people who already own specific products for advice also can be useful. Although products change so rapidly that their information may be out of date, people with experience may be able to provide you with suggestions for what to look for in a product you might purchase. It often is a good idea to purchase products you do not understand from large, established businesses. Because these firms have been successful for many years, they are likely to be honest and to stand behind the products they sell. There is, of course, no guarantee that a large business will never take advantage of consumers, but it is more likely to be worthy of your trust than Joe who sells computer components out of the trunk of his car.

✓ CHECKPOINT

Why is it important to set personal financial goals?



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Many magazines provide information to help you evaluate products before you purchase them. What other sources can you use to find such information?

Making Wise Consumer Decisions

There are more goods and services offered for sale than anyone could possibly buy. Unless you are fortunate, you probably will have little income left over after you pay your necessary expenses to buy things that you don't need. *When you choose how to spend your income, you should be sure that your decision is based on reason and logic rather than on emotion or impulse.* Consider making a rule for yourself to never purchase anything important without taking time to consider the alternatives. Making wise spending decisions can take you a long way along the path to achieving your most important life goals.

Budgeting Your Income

Have you ever run out of money by Wednesday morning, when you won't be paid again until Friday? Or, do you know whether you will have enough saved next summer to go on vacation or buy the used car you want? When you come down to it, do you understand where and how you spend your income? Surveys show that the answer for most people in the United States is "no." Every consumer needs to create a financial plan called a **budget** for how they receive and use income. Without a budget you may be leaving your financial future to chance.

budget
A consumer's plan for receiving and using income

Assume that you have already set your life goals. Now the task is to decide how to use the income you receive to achieve these goals. The most important information you need in order to get started are records of your income and your spending. You should always have a place to store a complete record of the income you receive and how you spend or save it. You should be sure this record is up to date. Without this information, any budget you create is likely to be no more than a piece of fiction: It might look nice when you read it, but it probably will have little to do with the reality of your life.

BUDGET WORKSHEETS

An important step in creating a budget is to develop a worksheet that contains predictions of your expected income, spending, and saving, for a month. A sample one-month budget worksheet appears in Figure 20.1. To create your own worksheet, divide a sheet of paper into four columns. List the sources and amounts of income you expect to receive at the top of the first and second column. Add the amounts to find your total income. For most young people, predicting future

One-Month Budget Worksheet for a Typical Student — **Figure 20.1**

	Expected Amount	Actual Amount	Difference
Monthly Income			
Allowance	$ 60.00	_____	_____
After-School Job	$200.00	_____	_____
Total	$260.00	_____	_____
Monthly Spending			
Food	$ 35.00	_____	_____
Entertainment	$ 50.00	_____	_____
Clothing	$100.00	_____	_____
Miscellaneous	$ 25.00	_____	_____
Total Spending	$210.00	_____	_____
Monthly Saving	$ 50.00	_____	_____
Total Spending and Saving	$260.00	_____	_____

income is a relatively easy task. The reality is that you are not likely to have all that much income and it is likely to come at regular times each month.

Next, list amounts you expect to spend in the first and second columns under the total expected income you have just calculated. This is the part of your worksheet that is most likely to be a challenge. Many people, both young and old, do not know where much of their income goes. There is no point in trying to predict each individual transaction. Listing a total of $35 for food or $50 for entertainment is sufficient. Total the amounts you expect to spend.

Finally, below the expected amount of total spending, list the amount you intend to save. The total amount of spending and saving for the month should equal the amount of income. If these amounts are not equal, adjust spending or saving to bring them into balance.

Over the next month, keep track of all your income and spending transactions. Total and list these amounts in the third column of your worksheet. Compare the actual amounts with your predictions and list the differences as positive or negative amounts in the fourth column. Use these differences to help you adjust your spending predictions. Then try it for another month. You may choose to change how you spend your income if your choices will not allow you to achieve your financial goals. After several months, you should know enough about your spending habits to create a one-year budget.

KEEP YOUR BUDGET UP TO DATE

Having a budget will not help you achieve your financial goals unless you choose to follow it. You must continue to keep complete records of your income, saving, and spending. Compare your budget with reality at least several times each month to be sure you are succeeding. *You should review and revise your budget at least once a year or any time your financial situation changes.*

Comparison Shopping

No matter what product you might want to buy, there usually are many businesses that offer similar products for sale at different prices. To improve your likelihood of getting the best product and price, you should always comparison shop. **Comparison shopping** is the act of reviewing products and prices offered by different businesses for similar products before making a purchase decision. Although it would be difficult and time consuming to try to find and evaluate every possible product you might buy, it is unwise to simply purchase the first product you see without considering your alternatives.

Suppose you go shopping at a clothing store and see a pair of jeans selling for $70. You like them, but should you buy them? Spending $70 for a new pair of jeans does not fit into your budget. Are there other jeans you could buy for less that you would like just as well?

Finding and evaluating alternative products may be no more difficult than logging on to the Internet and visiting a few Web stores. Even if you do not *buy* online, shopping online will give you a

comparison shopping
The act of reviewing products and prices offered by different businesses for similar products before making a purchasing decision

Investigate Your Local ECONOMY

Try comparison shopping for items you plan to buy now or in the future. Make a list of three items you wish to purchase. Have an idea of the amount you are willing to pay for each item before you begin. Choose one of the items for this activity. Shop in three or four different types of retail outlets for your item. For example, for clothing, you might choose a high-end clothier, a department store, a discount store, and an online store. Write down the characteristics of the alternative products you find in each store, noting the price of each one. Determine which item you would purchase, and list your reasons for doing so. Prepare to discuss your choice in class.

good idea of your alternatives and whether $70 is more than you should pay for the jeans you want. Although it may take more time and effort, the same could be accomplished by visiting a number of stores at your local mall. In the end, you may decide that it is a better use of your scarce funds to buy a $30 pair of jeans even if they are not as fashionable as the ones you saw first. Comparison shopping can be a big help in your effort to stay within your budget.

Rational Consumer Choice

When shopping, your goal should be to make a **rational consumer choice**. This is a choice to buy or not buy a product so that your satisfaction is the greatest possible per dollar spent. Again, suppose you are thinking of buying a new pair of jeans. After considering your alternatives, you might decide that $70 is just too much to spend if you want to stay within your budget. If you spend $30 for the less expensive pair, you will have $40 left over to buy something else you like more. Put another way, the satisfaction you expect from buying a $30 pair of jeans plus what you could do with the extra $40 could exceed the satisfaction you expect from buying the $70 jeans. Another alternative would be to decide your old jeans are still good enough. You will save the entire $70 to help pay for insurance on a used car your parents promised to buy you after graduation. You have decided that this use of your limited income will bring you the most satisfaction per dollar spent. In this case, not buying the jeans at all is a rational consumer decision for you.

rational consumer choice
A choice to buy or not to buy a product so that your satisfaction is the greatest possible per dollar spent

✓ CHECKPOINT

Why should consumers always try to make wise spending decisions?

Assessment 20.1

Key Concepts

1. Why is it important to consider your life goals when you decide how to use your current income?
2. What are examples of several goods or services you need? What makes them different from things you only want?
3. When is a choice to buy a product a rational decision?

Xtra! Study tools
thomsonedu.com/school/econxtra

Think Critically

4. **Home and Family** Explain why a couple expecting their first child will need to revise their budget.

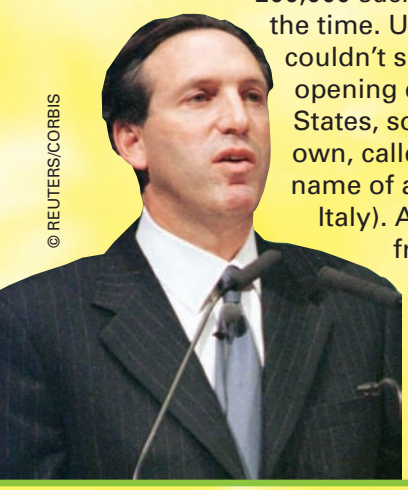
movers + shakers

Howard Schultz *Chairman, Chief Global Strategist, Starbucks Corporation*

Howard Schultz's family lived in a Brooklyn, New York, housing project. Thanks to a football scholarship, Howard was able to attend Northern Michigan University. After graduating he worked a variety of jobs until becoming the manager of U.S. operations for Hammarplast, a Swedish maker of stylish kitchen equipment.

While at Hammarplast, Schultz noticed that a company in Seattle seemed to be purchasing an unusual number of specialty coffee makers. So in 1981 he traveled there to see what the company, called Starbucks, was doing with them. He fell in love with the rich aroma of the Starbucks store and with the extraordinary care the owners put into selecting and roasting coffee beans. "I walked away . . . saying, 'What a great company, what a great city. I'd love to be a part of that.'"

Schultz convinced Starbucks' owners to hire him, and he became director of marketing and operations. During a trip to Italy, Schultz noticed the popularity of Italian coffee bars. There were, in fact, 200,000 such coffee bars in Italy at the time. Unlike his bosses, Schultz couldn't shake his enthusiasm for opening coffee bars in the United States, so he opened one of his own, called "Il Giornale" (the name of a newspaper in Milan, Italy). A year later, with backing from local investors, he bought Starbucks for $3.8 million. By year's end, 17 Starbucks coffee bars were established. Within five years, 165 Starbucks were open in such cities as San Francisco, San Diego, and Denver.



© REUTERS/CORBIS

By 1995, the company began opening Starbucks in Barnes & Noble bookstores. It finalized deals to have Starbucks served to all United Airlines customers and to guests at some of the finest U.S. hotels. It also opened a second roasting plant. By the end of 1995, Starbucks operated 676 coffee bars. The next five years saw growth into foreign markets, the introduction of Starbucks ice cream, and Starbucks coffee sold in grocery stores.

"Our first priority is to take care of our people (employees), because they are the ones responsible for communicating our passion to our customers. If we do that, we accomplish our second priority, taking care of our customers," Schultz believes. He is true to his word, offering stock options to all employees and comprehensive health insurance for any employee working 20 hours or more a week.

Starbucks began to sell common stock in 1992 under the trading symbol SBUX. The trend has been upward ever since. "Our stock market listing provided the liquidity that has allowed many people at Starbucks, including me, to cash in stock options and buy things we need or have long wished for. It has likewise served as a great incentive to attract talented people, who join us not only because of the excitement of building a fast-growing company but also because of the value we are creating."

Today Starbucks operates about 6,000 of its own shops around the world. Licensees and franchisees operate another 4,200 outlets, primarily in shopping centers and airports. Net income for 2005 was $494.5 million, a 26 percent increase over 2004. The company employs more than 110,000 workers.

SOURCE READING

Is it more beneficial for Starbucks employees to receive stock options instead of cash bonuses? Why or why not?

ENTREPRENEURS IN ACTION

What traits does Howard Schultz possess that have helped him be successful in business? If you were starting your own business, which of these traits would you want to have, and why?

Sources: www.myprimetime.com/work/ge/schultzbio/index.shtml; www.starbucks.com; Howard Schultz, *Pour Your Heart into It: How Starbucks Built a Company One Cup at a Time*, Hyperion, 1997.

20.2 Using Credit Responsibly

Objectives

- Understand whether to use cash or credit to pay for purchases.
- Name the two sources of consumer credit.
- Describe how lenders decide who qualifies for credit.
- Explain how you can avoid credit problems.

Overview

People buy products using either cash or credit. Credit often is more convenient than cash, and it allows consumers to enjoy some products they could not afford to purchase otherwise. The cost of a home, car, or education, for example, would be too great for most people to pay without using credit. Excessive use of credit, however, can create financial problems that some consumers are unable to overcome. To be a responsible consumer, you need to learn how credit works and how to use credit wisely without going too deeply into debt.

Key Terms

consumer loan
consumer sales credit
secured loan
unsecured loan
creditworthy
credit history
credit rating
credit scoring

In the News

Credit-Card Debt May Lead to Financial Trouble

As reported in 2005, the average American household had more than 12 credit cards and owed nearly $2,000 in credit-card debt. About 60 percent carried a balance from month to month and thus were required to pay interest on their accounts. If cardholders miss a payment or exceed their credit limits, card issuers typically tack on another $25 to $50 fee. In fact, credit-card issuers collect nearly as much from fees and penalties as from interest. In 2002, for example, these fees totaled more than $14 billion. When accounts become delinquent, interest rates can jump overnight from 12 percent to 30 percent. This would increase monthly interest payments on a $2,000 debt from $20 to $50. For people living on the financial edge, the extra $30 can be too much to pay. This will lead to more fees and interest payments in following months, causing their total debt to climb even if they make no additional charges. Officers of the American Bankers Association defend these fees and higher interest rates by saying they are designed "to encourage good financial management." It can be argued that cardholders who make credit-card purchases they can't afford create their own problems. Still, imposing penalty fees and high interest rates on people experiencing financial difficulty increases the likelihood that some will default on the loans and seek the protection of bankruptcy.

THINK ABOUT IT

What actions, if any, do you think the government should take to regulate penalty fees and higher interest rates placed on delinquent credit-card holders?

Source: Kathleen Day and Caroline E. Mayer, "Credit Card Penalties, Fees Bury Debtors," *Washington Post*, March 6, 2005, p. A01.

Paying for Your Purchases

It would be nice if we always had enough money to pay for anything we might want with cash, a check, or a debit card. Making a purchase with a debit card is like writing a check. It allows consumers to deduct the price of purchases directly from their checking accounts. Using a debit card or writing a check are ways to spend funds you have deposited in a checking account.

The reality is that we cannot pay cash, write a check, or use a debit card for many products we want at the time we want them. In this chapter we will assume that paying for a purchase with a check or a debit card is no different from paying cash. However, there are important differences in these types of transactions, and they will be discussed in Chapter 21. Even when we do have enough cash to pay for a product, there is a temptation to borrow funds to make the purchase and use our cash to buy something else. The cash or credit decision is made by millions of consumers every day. Often their choices land them in financial trouble that prevents them from achieving their life goals.

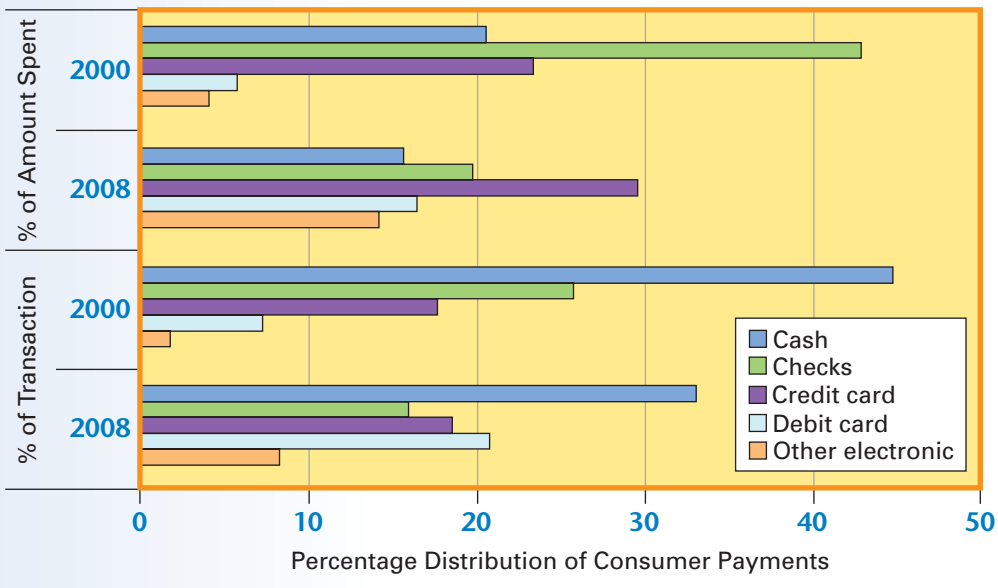
Will That Be Cash or Charge?

How often have you heard a clerk in a store ask whether a customer wants to pay cash or to charge a purchase? How often does the customer choose cash? There are important costs and benefits for each choice. Deciding whether using cash or credit is the best decision depends on your individual financial goals and situation. Study Figure 20.2 to learn how consumers chose to pay for their purchases in 2000 and how they are projected to make this decision in 2008. Whether measured by the number of transactions or the total amount spent, credit cards, debit cards, and other electronic payments are becoming more important while cash and checks are in decline.

Percentage Distribution of Consumer Payments, 2000 and 2008 — **Figure 20.2**

As a percentage of consumer payments, cash and checks are becoming less important, while credit cards, debit cards, and other electronic payments are becoming more important.

Source: *Statistical Abstract of the United States*, 2006, p. 766.



BENEFITS AND COSTS OF PAYING CASH

Any time you pay cash for a product, you give up your ability to use that cash to buy something else instead. Remember that every consumer decision involves an opportunity cost. However, when you pay cash now, you do not give up your ability to spend other cash you will earn in the future. You also will not pay interest or other fees for borrowed funds that will reduce your ability to spend in the future.

BENEFITS AND COSTS OF USING CREDIT

Also remember that although credit allows you to consume now, you must pay for your current consumption by giving up some of your ability to spend in the future. Further, the amount of future spending you give up will exceed the additional current spending you enjoy because you must pay interest and fees for the funds you borrow.

There are legitimate reasons for using credit to make consumer purchases. First, your earning power usually grows as you grow older. An entry-level employee may earn little more than the minimum wage. Ten years later this same worker may be a manager earning a good salary, and after 30 years he or she may own the firm. It makes sense for most people to borrow at a young age for major purchases such as a home because they will be better able to pay off their loans when they are older and have a larger income.

Another reason to borrow is to make large purchases that will increase in value or provide an ongoing benefit over time. Most students borrow at least part of the money they need to attend college. Data show that completing a four-year college degree typically doubles a person's lifetime earnings compared to earning a high-school diploma. Borrowing $50,000 to increase your earnings by $500,000 makes good economic sense. The same argument can be made for borrowing to buy a house. Very few people can pay for a house in cash. Still, owning a house provides much more than a place to live. It eliminates the need to pay rent. Mortgage interest is tax deductible. The resale value of a home usually increases over time. What's more, the increase in a home's value when it is sold usually is not taxed by the government.

For most people the question is not "Should I ever use credit?" It is "How can I use credit responsibly?"

✓ CHECKPOINT

What factors should you consider in determining whether to use cash or credit for a purchase?

Sources of Consumer Credit

Most sources of consumer credit can be divided into two basic categories. **Consumer loans** involve borrowing money to be repaid in regular installments over time. Most loans for homes, automobiles, and education fall into this category. On the other hand, **consumer sales credit** refers to amounts charged to an account that involves variable payments over time. Such debts do not have a specific term or time in which they must be paid. Consumer sales accounts often have no set interest rate, but one that changes with market conditions or the financial situation of the individual borrower. Charges placed on most credit cards are examples of consumer sales credit.

consumer loan
Borrowing money to be repaid in regular installments over time

consumer sales credit
Amounts charged to an account that involves variable payments over time

Consumer Loans

Consumers may choose from among many sources of credit. Ultimately, most consumer loans are provided by banks. Consumers may apply for a loan directly from a bank, or they may receive their loan through a retail store that obtains the funds it loans from a bank. Consumer loans also are provided by thrift institutions, more commonly known as savings and loans, or savings banks. Many loans are made by credit unions

that limit their lending to their members. Other sources of consumer loans include finance companies and pawn shops. These sources generally charge higher rates of interest and should be avoided if possible.

In 2006 it was possible for consumers in the United States to borrow money to purchase a home at interest rates of 7 percent or less. At the same time, they might have been required to pay 9 percent to borrow to purchase a car and 14 percent to charge a new computer on their credit card. Most of the rate differences can be attributed to differences in the amount of risk associated with the particular loan.

As noted in Chapter 10, when a consumer borrows to buy a house, the structure is pledged as collateral for the loan. If the borrower is unable to make the required payments, the lender may take possession of the property and sell it to pay the debt. Houses do not usually lose value, and they do not leave town. There is little risk in making a housing loan, so the rate charged for these loans usually is low. When a consumer borrows to buy a car, the car is pledged to back the loan. Again, if the payments are not made, the car can be repossessed and sold to satisfy the loan. Cars lose value as they are driven, and they can be stolen. As a result, the interest charged on automobile loans usually is greater than on home loans. Both home and auto loans are **secured loans** because property is pledged to back their repayment.

Almost all credit-card borrowing is made up of **unsecured loans**. In these cases, no specific property is pledged by the borrower that can be sold to satisfy the debt if payments are not made. The legal process of obtaining payment for these debts is much more complicated and expensive for lenders than for secured loans. Therefore, unsecured loans require higher interest payments. Although it can be difficult, the best way to be offered lower rates is to buy something that serves as collateral for the loan.

secured loan

Loan for which property is pledged to back its repayment

unsecured loan

Loan for which no specific property is pledged by the borrower that can be used to satisfy the debt if payments are not made



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Thrift institutions, also called savings and loans, are one source of consumer loans. Savings and loans typically provide secured loans for consumers. What is the difference between a secured loan and an unsecured loan?

Consumer Sales Credit

Probably the most common source of credit in the United States involves charges made on a credit-card account. This type of consumer sales credit is used primarily for convenience. It is much easier and safer to shop using a credit card than to carry large amounts of cash, which could be lost or stolen.

Most credit cards are issued through VISA, MasterCard, or Discover. Banks, thrifts, credit unions, and other organizations sign consumers up for these credit cards and receive a share of the fees and interest that consumers pay. *Consumers should be careful when they choose a credit card because of the wide differences from card to card in fees and interest rates charged.*

CREDIT-CARD FEES

At one time almost all credit-card organizations charged an annual fee for a card. These fees typically ranged between $20 and $100 per year. In recent years, competition among credit-card issuers has mostly eliminated such fees. Today there is little reason to use a card that requires an annual fee. For most card users, other fees are more important. These include fees for charging more than your credit limit or for making payments after their due dates. These fees can be as much as $40 each or more. Suppose your limit is $1,500 and you accidentally charge three purchases in excess of this amount. You might find that you owe the credit-card company an extra $120 in addition to the amount of your purchases and interest on your debt. Always keep track of your credit-card spending to avoid exceeding your limit. You also should be sure to make payments on time.

INTEREST ON CREDIT-CARD DEBT

Each month you will receive a statement from your credit-card issuer, itemizing your credit-card purchases, the total you owe, and the minimum payment due that month. There will be a grace period after this statement is sent before you must pay your entire balance and owe no interest. Grace periods typically range from 15 to 21 days, depending on the individual credit agreement. If you pay only the minimum due, you will be charged interest on the funds you have borrowed, usually from the time of each credit-card purchase.

The interest rates charged by most credit card issuers are substantial. Although some cards initially offer low rates to attract new cardholders, most eventually raise these rates, ranging from 12 to 20 percent or more. *It is wise to pay off your credit-card balance each month if you possibly can.* If you cannot, and if the balance is large, a better choice may be to take out a loan from a bank or credit union to pay off the credit-card debt. The rate on the loan is almost certain to be lower than the rate on the card.

✓ CHECKPOINT

What are the two basic sources of consumer credit?

Receiving and Using Credit

Think about your friends and relatives. Would you be willing to lend $100 to any of them if you had the money to lend? Are there any you would refuse? What if the amount was $1,000 or more? Would that make a difference? What are the differences between people to whom you would be willing to lend money and those you would not? One



Obtain a copy of a credit card statement and look for the disclosure information, which usually is found on the back of the first page. Find a partner who has a statement for a different credit card. Compare the information disclosed by the two credit-card issuers. Be sure to compare how each issuer calculates interest charges. Report your findings in class.

important difference probably is whether you believe your loan would be repaid on time. Like you, businesses that extend credit to consumers evaluate the people who come to them asking to borrow money. After all, these businesses don't want to lose money any more than you do.

The Three Cs of Credit

creditworthy
The measure of your dependability to repay a loan

The term **creditworthy** refers to the measure of your dependability to repay a loan. Lenders evaluate those who ask for credit to determine whether they are deemed creditworthy. There are three primary factors, known as the three Cs of credit, that lenders typically consider when they evaluate a consumer's creditworthiness. These are character, capacity, and capital.

CHARACTER

credit history
A person's record of paying bills and debts over time

Character is a measure of your financial responsibility. It is determined largely by your credit history, or record of paying bills and debts on time. Lenders reason that consumers who have paid their debts on time in the past are likely to repay them on time in the future. A record of late, missing, or unpaid debts almost guarantees that a consumer will find it difficult to obtain credit.

CAPACITY

Capacity is a measure of a consumer's ability to repay a debt on time. The amount of income a consumer receives each month is one factor lenders use to determine capacity. Equally important is the amount that a consumer already is obligated to pay. A person who earns $10,000 each month has little capacity if his current debts require payments of $9,500.

CAPITAL

Capital is a measure of the value of things a consumer owns that could be sold or cashed in to repay a loan. Capital includes savings, stocks, bonds, buildings, and land. The more capital a consumer has, the safer a lender feels in making a loan.

To be creditworthy, you need to possess each of the three Cs of credit. Having a large income has little value to a lender if you have a history of not paying your bills on time. Owning a 1,000-acre ranch won't help you repay a debt if you share your ownership with another person who refuses to sell.

Credit-Reporting Agencies

There are three primary credit-reporting agencies, or credit bureaus, that gather, maintain, and share financial information about almost every adult in the United States. These businesses are Equifax, Experian, and TransUnion. When you apply for a loan to buy a house, apply for a credit card, fail to make a payment on your auto loan on time, or complete virtually any other financial transaction, a record of this event will be sent to one or more of these credit bureaus. Regardless of which one receives the record first, they will all get it soon enough because these organizations share the information they gather. The records of a consumer's **credit history** are then offered for sale to other businesses that might extend you credit.

credit rating
The measure of a person's creditworthiness

CREDIT RATINGS

A consumer's **credit rating** is the measure of this person's creditworthiness. It is based on many factors, including the person's history of making payments on time, her current debt, her credit history, her recent applications for credit, and the type of credit she tends to use. Other factors that could affect a credit rating are the type of job a person holds, how long she has held that job, how long she has lived at her current address, and her level of education. Basically, lenders want to know as much as possible about people who apply for credit. This type of knowledge not only protects lenders but it protects other borrowers as well. If a borrower fails to repay a loan, the lender may be forced to charge other borrowers more, or stop making loans entirely.

CREDIT SCORES

credit scoring
A system that assigns a number, or score, to each consumer indicating whether this person is a good or bad credit risk

In recent years, a method of evaluating consumers' creditworthiness called credit scoring has become much more common. **Credit scoring** is a system that assigns a number, or score, to each consumer indicating whether this person is a good or bad credit risk. It is based on a formula that was originally developed by the Fair Isaac Company in the 1950s. This is the source of its technical name,

FICO. FICO scores make it much easier for lenders to decide whether or not to extend credit to a specific consumer. Suppose a bank decides that it will make no loans to people with a FICO score below 650. This means that when you apply for a loan with your FICO score of 623, the bank will quickly explain that you do not qualify for their credit. FICO scores also are used to set interest rates on some loans. If your score is below 650, you might be required to pay a higher rate than someone else who has a score of 700.

Obviously your credit score can be important to your financial situation. The formula used to set these scores is a secret, but there are steps you can take to increase your score over time. These include paying all your bills on time, using credit only in limited amounts, paying down your debts, and closing accounts you do not use regularly.

ACCESSING YOUR CREDIT FILE

Consumers have the legal right to see the information gathered in their credit files by credit reporting agencies. This information may be accessed for free online once a year at www.annualcreditreport.com, or you may write to each of the three major credit bureaus for a report on your file. There also are businesses that will automatically send you reports for a fee. *Most experts recommend that consumers review their credit files at least once a year to determine whether mistaken information appears in them.*

If you discover a mistake in your credit file, you can write to the credit bureau explaining the mistake and request that the information be corrected. If the bureau disputes your point of view and refuses to remove the information, you have the right to enter a 100-word explanation that will go in your file.

✓ CHECKPOINT

How do lenders determine to whom they should grant credit?

ETHICS IN ACTION

Manipulating Your Credit Score

As of the beginning of summer 2006, all three major credit reporting bureaus for the first time used the same formula to arrive at a person's credit score. However, earning the highest score, and thereby the lowest interest rate, remains the name of the game. Of course, utilizing appropriate amounts of credit and paying off your outstanding loans as promised over an extended period of time should be the prime determinants of your credit standing. Nonetheless, even with a unified formula, the potential for improper manipulation remains. The key is the data from which the credit bureaus work. If it is corrupted, even the best formula produces improper results. In fact, according to industry experts, a large number of tricks can be used to improve your credit score practically overnight. Companies offering "credit repair" services in this gray area abound. For example, if you have questionable credit, you could have a well-to-do relative or friend add your name as an authorized user to his or her established credit card. Even if you have no actual access to the card, this can boost your credit score. Now companies are offering, for a few hundred dollars, to be that relative with the "seasoned" credit rating. Or, for several thousand dollars, they will add the questionable person's name to several such cards with established payment histories for a larger boost in your rating. This and other types of manipulations cost lenders and, ultimately, consumers.

THINK CRITICALLY

Do you think such manipulation of credit-card scores is ethical? Why or why not?

Sources: Geoff Dutton, "Credit Fix Dismissed as House of Cards," *Columbus Dispatch*, March 6, 2006; Neal Conan's *Talk of the Nation*, NPR, "A New Look at Credit Scores," March 16, 2006.

Avoiding Credit Problems

Every year millions of consumers experience problems with credit accounts. Most problems are the direct result of poor record keeping, late payments, or excessive borrowing. Lending institutions also may make mistakes that can harm consumers. In either case, it is important for all consumers to stay aware of their financial situations and develop financial habits that will establish and protect a positive credit history.

Use Credit Wisely

Credit is dangerous because it is so easy to use. Many consumers use credit without much thought. They walk into a store, see a product they like, slap down their card, and it's theirs. The problem is, the responsibility to pay the debt they have just created also is theirs. Consumers should try to limit their credit purchases to products they need and to situations where using cash or check are not reasonable methods of payment. Any use of credit should be the result of a rational consumer choice. The best way to avoid credit problems is to limit your credit purchases to those you need to use credit to make and that you will be able to repay without making other important sacrifices.

Establish a Positive Credit History

Most young people have not lived long enough to have a much of a credit history. How can lenders know whether you have the character to repay a loan when you have never borrowed money before? The best way to establish a positive credit history is to start small and avoid making financial mistakes. Here are some steps you can take to create a positive credit history for yourself.

- Be a regular saver. Make deposits every month even if they are small.
- Ask for a credit card from the bank where you save. You might pledge the funds in your savings account to cover the amount you are able to charge on your card.
- Once you have used your credit card, be sure to make your payments on time.
- Never exceed your credit limit.
- Try to avoid changing jobs too often.

Repair a Damaged Credit Rating

Sometimes bad things happen to good people. You might be injured in an accident. You could be laid off from work. Your house might be damaged in a fire. Any of these events could prevent you from paying your debts on time. If this happened, your credit history would show that you had missed your payments. You might find it impossible to borrow at the very time when you need credit the most.

If you ever find that you cannot pay your debts on time, there are steps you can take to protect your credit history or repair it over time. These include the following:

- If you find that you will not be able to make a payment on time, contact the lender and explain the situation. Most lenders are willing to work with you to solve your problem if they believe you will eventually pay your debt.
- Do your best to avoid using any additional credit. Cut back on spending that is not absolutely necessary.
- Identify the most important lenders and pay them first. Write other lenders to explain why you can't pay now and how you intend to pay in the future.
- When your financial situation improves, use credit regularly but only in small amounts.
- Pay off your account balances every month if you possibly can.
- Always try to pay more than the minimum amount required.

Although it can take years to repair a damaged credit history, the sooner you take these steps the sooner you will be able to take advantage of the benefits of having a positive credit rating.

✓ CHECKPOINT

How can you avoid problems with credit?

Assessment 20.2

Key Concepts

1. Why do many consumers use cash to make small purchases and credit for larger ones?
2. Name, define, and give an example of each of the two basic sources of consumer credit.
3. Why is the interest rate for secured loans usually lower than that for unsecured loans?
4. What are the two major costs involved in using credit, and how can consumers manage these costs effectively?
5. Identify and define each of the three Cs of credit.
6. What is the difference between a credit rating and a credit score?
7. Why do many experts recommend that consumers limit their use of credit?

Xtra! Study tools
thomsonedu.com/school/econxtra

Graphing Exercise

8. The amount of money consumers owe through various types of consumer sales credit has grown in recent years. Use the data in the table to construct a line graph that shows this growth. Evaluate the importance of this growth to the U.S. economy.

Total Outstanding Consumer Sales Credit

Year	Amount of Outstanding Consumer Sales Credit in Billions of Dollars
1996	$499.6
1998	$578.9
2000	$677.7
2002	$738.3
2004	$790.5

Source: *Economic Indicators*, January 2006, p. 29.

Think Critically

9. **History** Before the 1960s, consumer use of credit cards was limited. Cards that were available generally were issued by individual stores and could be used only in the issuing store. Describe how stores have benefited from the growth of consumers' use of credit cards since the 1960s. What new costs have resulted from this use? Do you think most consumers are better or worse off because of their use of credit cards? Explain your answer.

Sharpen Your Skills



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Critical Thinking

Some people think it is wise to avoid using credit unless it is absolutely necessary. They argue that using credit creates habits that are hard to break. People get used to buying goods or services with plastic and fail to realize how much debt they are building up. Then, if a real financial problem occurs, the consumer may not be able to borrow more because he or she is already so far in debt. It may be necessary for you to use credit in certain situations, but it should never become a daily habit.

Other people think the best approach is to charge purchases on a regular basis. As long as you pay your debts on time, this borrowing creates a long credit history that can impress lenders. This means you can usually have things you want, when you want them, and you don't need to carry much cash with you when you shop. These people reason that if a real financial problem should arise, lenders will see that you use credit and pay debts responsibly, so they will be willing to give you additional credit to help you with your problem. They argue that using credit for most purchases is a rational consumer decision.

Which of these two approaches makes more sense to you? Do you think a credit-card issuer would care whether a consumer has used little credit in the past? Would they be more interested in whether a consumer has ever missed or been late with payments? When you have a credit card of your own, will you use it only when you must or as a regular way to pay for goods and services?

Apply Your Skill

1. In 2005 the total balance on roughly 40 percent of all credit-card accounts was paid off each month. At that time there were about two billion active credit-card accounts in the United States. Assume that the average balance paid off each month was $400 and the average interest rate was 12 percent per year (1% per month). Calculate the total amount in interest consumers saved each month by paying their total balances.
2. Credit-card issuers often send blank checks to consumers, encouraging them to write a check to borrow funds from their credit-card accounts. When this happens, the consumer is responsible for paying interest on the amount of the check from the day it is written until the day it is paid in full, even if the balance in the account is completely paid each month. There is no grace period on borrowing that takes place through credit-card account checks. Evaluate the wisdom of using one of these checks versus using a credit card.
3. Suppose that you have $100 in cash that you can spend before you are paid again at the end of next week. You need to buy a winter jacket before a predicted snowstorm hits tomorrow. You could pay cash for a new jacket you have found that has a price of $89; but after sales tax, it would leave you with almost no cash until your next payday. As an alternative, you could charge the jacket on your credit card and pay for the purchase at the end of the month. Explain which of these alternatives you would choose, and why.

20.3 Consumer Protection

Objectives

- Explain why consumers need the government to protect them from defective or dangerous products.
- Understand how you can take responsibility for your own protection as a consumer.
- Know how to protect yourself from identity theft and what to do if your identity is stolen.

Overview

Many products are too complex or technologically advanced for consumers to understand or evaluate adequately. The U.S. government has created agencies that aim to help protect consumers from products that are defective or dangerous. Given the billions of transactions that take place in our economy, the government cannot monitor every last one. The best protection consumers can have is their own ability to evaluate products to make rational decisions. Consumers also need to take measures to protect themselves from the growing problem of identity theft, in which someone fraudulently uses another's identity to obtain credit or to access financial accounts.

Key Terms

Food and Drug Administration (FDA)

Federal Trade Commission (FTC)

cease and desist order

Consumer Product Safety Commission (CPSC)

Environmental Protection Agency (EPA)

identity theft

In the News

FDA Overhauls Rules for Prescription Labels

Have you ever taken the time to read the label on a bottle of medicine your doctor has prescribed? If you have, did you understand it? What about the printed information often included inside the box? In January 2006, the Food and Drug Administration (FDA) announced that for the first time in more than 25 years, it was planning to overhaul the requirements for prescription labels. The new information will appear on inserts that will either be attached to, or enclosed with, prescription drugs. These inserts will be organized in a way that the FDA believes will be uniform and easy to understand. At the top of each insert will be a summary of information about the drug. This will be followed by a table of contents. New additions to the inserts will provide information for doctors. They will feature ways in which the drug can be explained to patients and ways to discuss possible interactions with other drugs. To the greatest extent possible, the labels will be written in language that ordinary people can understand. When specialized medical terms are introduced, they are to be explained. Additional information about prescription drugs will be made available to doctors and the public online at a government web site.

THINK ABOUT IT

Do you think these new rules will make it easier for patients to understand the drugs that are prescribed? How many people do you think will take the time to read these inserts? Do you feel a need to understand the prescription drugs you take? Explain your reasons.

Source: "FDA Announces New Prescription Drug Information Format to Improve Patient Safety," *FDA News*, January 18, 2006, www.fda.gov/bbs/topics/news/2005/NEW01272.html.

Government Efforts to Protect Consumers

How often do you buy or use a product that you don't really understand? For example, you probably use a computer at home or in school. You may be able to effortlessly surf the Web, download photographs posted by a friend, or maintain complicated financial records on a spreadsheet application. But does your ability to operate a computer mean you understand how it works? You probably are not qualified to repair a computer, and if you wanted to buy a new one, would you know enough to choose the best model to meet your needs and budget?

Consider other products you consume that also are too complicated or technologically advanced for you to really understand. You probably take medicines or dietary supplements but have no idea how they cure your illnesses or keep you healthy. And do you have any idea what ingredients the processed foods you eat contain? Take a few seconds to read the label of a breakfast cereal box. Can you understand what it means? What are niacinamide, thiamin mononitrate, or riboflavin? These substances are likely to be included in every breakfast cereal you eat. Do you know what they do, and is it really good for you to eat them? What about the preservatives or colorings that many foods contain? Are they really safe? How would you know? Most consumers rely on manufacturers to be responsible and on the government to set quality and safety standards to protect them from harm.

This type of problem extends beyond what we eat. For example, do you understand how the family automobile or lawn mower works? How about the flat-screen television you would like for your bedroom? Every day it seems that more and more consumer products are becoming technologically more advanced to the point that ordinary consumers are not qualified to evaluate them to make rational spending decisions. How can consumers protect themselves from products that are unsafe, defective, or poorly made? To help answer this question, the government intervenes in the market in an effort to protect consumers from dishonest or careless producers.



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The government requires manufacturers of food products to label packages with information about the ingredients in the food. Why is this information important to consumers?

The Roots of Government Protection

The federal government has a long history of consumer protection. In the years following the Revolutionary War, the federal government monitored product weights and measures to make sure that consumers received what they paid for. In the late 1800s, laws were passed to keep railroads from charging unreasonable rates and to prevent a large firm from monopolizing the market for specific goods and services such as steel or oil. During the early years of the twentieth century, laws were passed that were intended to assure consumers that products were safe and marketed honestly.

THE PURE FOOD AND DRUG ACT

The Pure Food and Drug Act was passed in 1906, possibly in reaction to Upton Sinclair's book *The Jungle*. This book exposed unsanitary conditions in the meat packing industry, prompting legislation for the government to improve food safety. The passage of this law, however, resulted in little immediate improvement. Although food processors were required to maintain sanitary conditions, there was no means provided in the law to monitor production and punish violators. It wasn't until 1938, when the Food, Drug, and Cosmetic Act was passed, that government gained these powers. Since then the **Food and Drug Administration (FDA)** has set standards for foods and drugs produced or marketed in the United States. The FDA has the power to impose fines and to make businesses withdraw products from the market. In extreme cases, the FDA can close a business that fails to comply with its orders.

THE FEDERAL TRADE COMMISSION

In 1914 Congress passed the Federal Trade Commission Act, a measure already discussed in Chapter 7. This law created the **Federal Trade Commission (FTC)** that was charged with making sure that businesses compete and market their products in a fair and honest way. Today the FTC sets standards for product packaging and labeling and honesty in advertising. It also enforces antitrust laws to limit firms with monopoly power. When the FTC determines that an advertising claim is false or misleading, it has the power to issue a **cease and desist order**, which requires the firm to stop making the claim. If the firm does not stop, it can be fined as much as $10,000 each additional time it makes the dishonest claim.

THE CONSUMER PRODUCT SAFETY COMMISSION

In 1972 the **Consumer Product Safety Commission (CPSC)** was created by Congress to protect consumers from dangerous products they might purchase or use. The CPSC has the power to force the manufacturer or marketer of any product it deems dangerous to recall the product and remove it from the market. The CPSC maintains a consumer web site that, among other things, lists all products that have recently been recalled. On average, the CPSC orders the recall of approximately 300 products each year. Figure 20.3 shows the number of recalls

Food and Drug Administration (FDA)

Federal agency that sets standards for foods and drugs produced or sold in the United States

Federal Trade Commission (FTC)

Government agency that ensures that businesses compete and market their products fairly and honestly

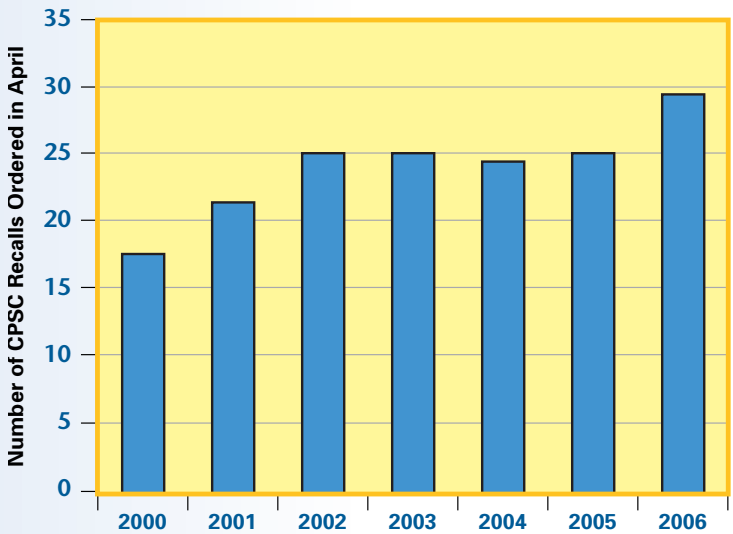
cease and desist order

FTC-issued directive to stop a firm making a false or misleading advertising claim

Consumer Product Safety Commission (CPSC)

Federal agency created to protect consumers from dangerous products they might purchase or use

Number of CPSC-Ordered Recalls in the Month of April, 2000–2006 **Figure 20.3**



Source: CPSC web site: www.cpsc.gov, May 10, 2006.

Environmental Protection Agency (EPA)
Federal agency that interprets and enforces laws passed by Congress that involve the environment

during the month of April from 2000 through 2006. Do you believe that there may be more than 300 consumer products that should be recalled each year? What does this tell you about the importance of using your consumer skills to evaluate products you might purchase?

THE ENVIRONMENTAL PROTECTION AGENCY

The **Environmental Protection Agency (EPA)** was established in 1970 to interpret and enforce laws passed by Congress that involve the environment. Among its many responsibilities, the EPA enforces quality standards for toxic emissions into the atmosphere and bodies of water. Although the laws that give the EPA its powers are enacted by Congress, the EPA recommends standards to Congress that generally are passed into law. The EPA also provides expert advice to businesses to help them meet environmental standards.

Other Government Protections

Further government protections are offered by other federal agencies and agencies at the state and local levels.

OTHER FEDERAL AGENCIES

Many other federal agencies are responsible for protecting consumers in other ways. The Federal Communications Commission (FCC) regulates television, radio, and cellular communications. The U.S. Securities and Exchange Commission (SEC) enforces laws regarding the marketing and trading of corporate stocks and bonds. Airlines are regulated by the Federal Aviation Administration (FAA). The Federal Reserve System sets and enforces standards that protect our financial system. Efforts to protect U.S. citizens from terrorism are the responsibility of the Department of Homeland Security (DHS). Each of these agencies is designed to provide a degree of safety to consumers they could not reasonably be expected to achieve on their own.

STATE AND LOCAL PROTECTION

All state and many local governments also have agencies that are responsible for protecting consumers. In New York, for example, the Department of Environmental Conservation (DEC) is charged with overseeing the disposal of industrial and

Span the Globe

Customs Seizures Turn Grandma and Grandpa into Crooks

With health care costs soaring, many U.S. citizens, mostly seniors who live on fixed incomes, have begun to shop across the border for cheaper prescription drugs. In 2005, sales by Canadian pharmacies to U.S. consumers neared $500 million. Although most prescription drug imports are illegal, U.S. Customs Agents and the FDA mostly ignored the practice until November 17, 2005. That November, in response to what some leaders charge was pressure from U.S. drug manufacturers, U.S. Customs agents began seizing mail parcels containing prescription drugs, and threatened intended recipients with legal action. The U.S. Customs policy change applies only to mail-order shipments and not to legal drugs brought over the border in person. Some members of Congress charge that the change aims to protect U.S. drug manufacturers, who sell at much higher prices. However, the FDA claims it is only trying to protect U.S. citizens from counterfeit drugs. In August 2005, a joint Customs-FDA operation proved that many of the drugs supposedly coming from Canadian pharmacies actually were from India, Israel, Costa Rica, and other countries, and many of those were counterfeit. Despite that finding, in July 2006 the U.S. Senate approved a measure to prohibit U.S. Customs from using federal funds to seize prescription drugs from Canada. In May 2005 the House passed a similar amendment. The legislation was still pending in late 2006.

THINK CRITICALLY

Do you think U.S. citizens should be able to import cheaper medicines even if some of these drugs are counterfeit? Would you shop for your medicines online and illegally if you could save money? Why or why not?

Sources: *Wall Street Journal*, July 24, 2006; *Boston Globe:* www.boston.com/news/nation/articles/2006/03/26/us_steps_up_seizures_of_imported_drugs/.

toxic waste in a safe and environmentally responsible way. California's Environmental Protection Agency (CEPA) enforces water and air standards that are more strict than those set by the federal government. In Mississippi, the Upper Mississippi River System Environmental Management Program (UMRSEMP) coordinates efforts to keep the Mississippi River clean and healthy.

On a local level, city zoning ordinances that keep factories using dangerous chemicals away from residential areas also are a form of consumer protection. The same is true of ordinances that limit the spraying of chemicals on lawns or discarding oil into waste-water systems.

✓CHECKPOINT

Why do consumers need the government to help protect them from defective or dangerous products?



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Which government agencies do you think are responsible for ensuring that oil refineries operate in a safe and environmentally responsible way? Justify your answer.

Take Responsibility for Your Own Protection

The United States is a big place. Millions of businesses operate in our economy selling hundreds of millions of different goods and services. In any year, consumer transactions number in the hundreds of billions. As a responsible consumer, you need to recognize that it is impossible for the government to protect your interests in every transaction you undertake. Your best source of protection is your own ability to evaluate products and make rational choices.

Consumer Rights and Responsibilities

As a consumer, you have many rights that protect you in the economy. For example, you have the right to be informed. When you buy a product, its label should tell you what it contains and the directions should explain proper assembly and use. You have a responsibility to read and follow the directions for proper use. When you buy a lawn mower, for example, the directions will tell you never to put your hands or feet under it when it is operating. If you are injured when you do, you have no one to blame but yourself. No law can be passed that will protect people from their own carelessness or stupidity.

Consumers have the right to return a defective or dangerous product to a seller for replacement, repair, or refund. They also have a responsibility to let a manufacturer or marketer know when a product is defective. Most businesses want to satisfy their customers. They cannot do this if they are not aware that a customer is dissatisfied. Suppose you buy a hair dryer that gives you an electric shock when you plug it in. If you simply throw it away because it wasn't very expensive, other consumers also may receive shocks from the same type of dryer. When you find a product you have purchased is defective or dangerous, you should immediately report the problem to the store where you bought

it. This will allow the business to test these products to find out if only yours was defective or whether they all should be pulled from their shelves and the manufacturer notified.

Use Common Sense

Probably the best way to protect yourself from products that are defective or dangerous is to use common sense. When all is said and done, most people are pretty smart. You don't have to be a trained automobile mechanic to see that one of the tires on your car is getting soft. If you don't have it inflated or repaired, you should not be surprised when it tears apart as you drive down the highway at 70 miles per hour. Or, suppose you see an advertisement for a set of dining room furniture. It offers a table and six chairs for just $199. Is this an offer you would seriously consider? If you bought the table and chairs, would you be surprised if the set fell apart after only a few months of use? As the saying goes, "When an offer seems to be too good to be true, it probably is."

identity theft
Crime in which one person fraudulently uses another's identity to obtain credit or to access financial accounts

✓ CHECKPOINT

What can you do to protect yourself as a consumer?

Dealing with Identity Theft

In recent years millions of Americans have suffered financial problems because someone else fraudulently used their identity to obtain credit or to access their financial accounts. This crime is known as **identity theft**. From a criminal's point of view, identity theft can be accomplished easily and there is little risk of being caught. To steal your identity, all the identity thief really needs is your Social Security number. Other information, such as your address, bank account, and credit card and personal identification numbers (PINs), also is useful. With this information criminals may be able to charge purchases to your credit cards or withdraw funds from your accounts. More often these thieves simply open up new accounts in your name that you don't know about until you start receiving bills for things you never bought. At the beginning of 2006, it was estimated that more than 10 million Americans had been victims of identity theft.

Protect Yourself from Identity Theft

The best way to protect yourself from identity theft is to avoid letting other



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When using an ATM, you should be sure that no one else can see the PIN number you are entering. What other precautions should you take with your personal information to protect yourself against identity theft?

people see your financial information unless they have a legitimate reason to see it. Never let anyone watch you enter your PIN when you use an automatic teller machine (ATM). Before you discard them, destroy all bank statements, bills, or other documents that include account or Social Security numbers. Don't leave financial documents in open view either at home or at work. Be suspicious of anyone who asks for personal financial information for reasons you do not understand. Be especially wary of e-mail or telephone requests for personal information. Although taking these steps can reduce the chance of you suffering from identity theft, there is no way to avoid this possibility entirely. For this reason it is important to always check your financial statements carefully to be sure they do not include transactions you did not make.

What to Do if Your Identity Is Stolen

If you discover that your identity has been stolen, there is a series of steps you should take immediately. These include the following:

- Contact each of the three major credit-reporting agencies to have a "fraud alert" placed in your credit file.
- Contact each business that has extended credit to you and explain what has happened. Ask that your existing accounts be closed and new accounts be opened for you under different numbers.
- Report your identity theft to law enforcement agencies.
- Contact the Federal Trade Commission's ID theft hot line at (877) 438-4338 or online (see the Net Bookmark in this section for the URL). The FTC will give you advice and provide you with an ID Theft Affidavit you may complete and use to identify yourself as a victim of identity theft by sending it to financial institutions you deal with.

Although victims generally are not financially responsible for fraudulent use of their identity, they are responsible for correcting mistaken information in their credit files. This can take many hours of work and result in significant problems that can cause them to temporarily lose their access to credit. In 2005 the government estimated that the average victim of identity theft spent more than $500 and 40 hours to correct the problem. Even after corrections are made, mistaken records can reappear in a consumer's credit file. *If you have been a victim of identity theft, you should review your credit file every few months.*

✓ CHECKPOINT

What is the best way to protect yourself from identity theft?

NET Bookmark

Access the FTC's web page about identity theft through thomsonedu.com/school/econxtra. Read the information on the page. Under "Hot Links," click on "Test Your Knowledge About Identity Theft—New OnGuard Online Quiz." Take the quiz, and then share your results in class.

thomsonedu.com/school/econxtra

Assessment 20.3

Xtra! Study tools
thomsonedu.com/school/econxtra

Key Concepts

1. Why is the need for government consumer protection unlikely to decrease in the future?
2. Why wasn't the Pure Food and Drug Act of 1906 effective when it was first passed?
3. What responsibility does the Federal Trade Commission have for advertising, and what power does it have to enforce its decisions?
4. What are two examples of rights and responsibilities consumers have in our economy?
5. What should you do if you become a victim of identity theft?

Graphing Exercise

6. Many who study the earth's environment worry about the possible increase in average temperatures that has been called global warming. They suggest that the gradual melting of the earth's ice caps can be linked directly to higher temperatures. The primary cause of global warming is thought to be the amount of carbon dioxide gas (CO_2) that is released into the atmosphere, primarily from burning fossil fuels. Use data from the table to construct a bar graph that shows the amount of CO_2 released by the United States in recent years. Explain what you think the government should do to protect consumers from global warming. Keep in mind that to reduce CO_2 emissions, Americans would have to reduce their consumption of fossil fuels (gasoline, coal, and heating oil).

CO_2 Emissions Released from the United States
Amounts in millions of metric tons

Year	Amount of Carbon Dioxide Released
1990	5,006.1
1995	5,318.5
2000	5,854.0
2002	5,795.6

Source: *Statistical Abstract of the United States*, 2006, p. 362.

Think Critically

7. **Government** Congress created government agencies that are responsible for protecting consumers. Some argue that these agencies are weak because many representatives and senators in Congress receive large campaign contributions from big businesses. Evaluate this point of view. Do you think big businesses exert too much control over government policy? What changes would you propose in the system if you had the power to make them?

CONNECT TO HISTORY



Credit Cards

In 2003 Americans used credit cards more than cash. This was only the fourth time in history that people changed how they pay for things. The first change was from barter to coins, or commodity money. The next change was from using coins, or commodity money, to using paper currency. Paper currency then gave way to using checks. The most recent change, to "plastic," took just five decades.

Credit cards have their roots in the early twentieth century, when some businesses issued cards to customers with charge accounts. The idea was expanded in 1947 when the Flatbush National Bank in Brooklyn, New York, created the third-party universal credit card. The bank's plan allowed its customers to charge purchases at stores within a two-block area of the bank. The concept was taken national in 1950 with the introduction of the Diners Club credit card. In its first year, Diners Club enlisted 285 businesses along with 35,000 cardholders. Diners Club quickly spread to other cities and other businesses, making it the first national credit card.

Throughout the 1950s, Diners Club faced little competition. Then in 1958 American Express and Carte Blanche entered the market, soon followed by major banks such as Bank of America. As demand grew, credit cards were issued to more and more people. To meet this demand, Bank of America in 1966 began to offer its BankAmericard (renamed VISA in 1977) to other banks. That same year, a second group of banks formed the Interbank Card Association. It purchased rights to the name "Master Charge" in 1969, which later became MasterCard.

Throughout most of the 1950s, credit cards were used only by the wealthy or by businessmen on expense accounts. This began to change in 1958 when Joe Williams mailed out 60,000 unsolicited BankAmerica cards to residents of Fresno, California (a practice outlawed in 1977). The stunt, known in the industry as the "Great Fresno Drop," was successful. Using their cards, Fresno residents went on a spending spree. Two major credit-card companies then used mass mailings to get their cards into people's hands. As easy credit came to the middle class, the number of issued credit cards grew. During the 1970s, the amount charged rose by 1,400 percent.

Well into the 1970s, the nation's largest department stores still did not accept bank-issued credit cards. These stores had their own cards, which they viewed as a way of creating customer loyalty and sales. As millions of customers began holding bank cards rather than store cards, however, a tipping point was reached. In 1979, J.C. Penney signed a contract with VISA to allow customers to use bank-issued cards. Other stores soon followed.

The next revolution in the credit-card business began in 1988, when Capital One was founded. Relying on sophisticated computer programs that analyze consumer purchasing and debt, the new company created an information-based strategy to market the cards. With thousands of different combinations of interest rates and incentives as well as innovative ideas such as balance transfers, low introductory rates, and multicolored cards, Capital One became one of the nation's largest VISA and MasterCard providers.

Plastic cards have changed how we buy and how we bank. Aided by the use of credit and debit cards, money moves electronically around the world as less and less cash changes hands. For most, the credit card is *the* financial innovation of the twentieth century. So far in this century, the debit card looks to be the premier innovation.

THINK CRITICALLY

What do you think the next major financial innovation will be? Will this change our borrowing, saving, and spending habits? Explain your answer.

Sources: Katrina Brooker, "Just One Word: Plastic; How the Rise of the Credit Card Changed Life for the Fortune 500—and for the Rest of Us," *50 Years of the Fortune 500,* 2004; Ted Miller and Courtney McGrath, "Power to the People," *Kiplinger's Personal Finance Magazine,* 54:82, January 2000.

20 Chapter Assessment

Summary

20.1 Consumer Choice

a Anyone who uses a good or service is a *consumer*. Consumers pay for most of the products they consume. *Personal finance* involves the way consumers choose to spend or save their income.

b A *budget* is one important tool consumers can use to help make wise financial decisions. Budgets are financial plans that predict a person's income, spending, and saving for a specific period. *Comparison shopping* helps consumers make *rational choices*.

20.2 Using Credit Responsibly

a Consumers pay for purchases with either cash or credit. Each payment method has benefits and costs. Paying with cash, check, or debit card prevents consumers from accumulating debt, but it requires them to carry cash, checks, or debit cards with them. Some products are too expensive for most people to pay in full upon purchase. Credit allows consumers to enjoy products now they could not otherwise afford. The use of credit, however, may lead to an accumulation of debt that can prevent people from achieving their life goals.

b There are two basic sources of consumer credit: consumer loans and consumer sales credit. *Consumer loans* are for a specific amount and must be repaid over a specific time period. *Consumer sales credit* involves amounts charged to an account that result in variable payments. These debts do not have to be paid within a specific period of time.

c Debts may be either secured or unsecured. *Secured loans* are backed with something of value, such as property or another asset. These loans have lower risk for lenders because the asset can be sold to satisfy the debt. *Unsecured loans* are not backed with assets. These loans pose higher risk for lenders because getting repaid can be expensive. Lenders evaluate consumers' *creditworthiness* according to the three Cs—character, capacity, and capital.

d The three main credit reporting agencies are Equifax, Experian, and TransUnion. Credit bureaus gather and maintain records of consumers' financial transactions that these bureaus sell to other businesses. A consumer's *credit rating* often is measured by a *credit*, or FICO, *score*.

e Consumers have the right to view their credit files for free once a year. When mistakes are discovered, consumers may ask to have them corrected.

f Consumers should work to develop a positive credit file for themselves by making payments on time and never exceeding their credit limit. If consumers discover they cannot make a payment on time, they should notify the lender and explain the situation before the payment becomes due.

20.3 Consumer Protection

a In recent years, many consumer products have become more complicated and technologically advanced. This has made it more difficult for consumers to make rational choices without assistance. The government has passed laws and created many agencies to protect consumers.

b Most consumer-protection laws were passed in the twentieth century. The first was the Pure Food and Drug Act of 1906. Other laws that followed included the Federal Trade Commission Act of 1914, the Environmental Protection Act of 1970, and the Consumer Product Safety Act of 1972. Each act created agencies or commissions that became responsible for the supervision and enforcement of various consumer protection laws. State and local governments also pass and enforce laws intended to protect consumers.

c So many transactions take place within the U.S. economy that it is impossible for the government to protect consumers in every situation. For this reason, consumers need to take personal responsibility and use their skills to

evaluate choices before they make buying decisions.

d *Identity theft* occurs when another person fraudulently uses a consumer's identity to obtain credit or withdraw funds from someone else's account. The best way to avoid becoming a victim of identity theft is to protect your personal financial information and Social Security number.

e Consumers who become victims of identity theft should contact the three primary credit bureaus immediately to have their files placed on a "fraud alert." They also should notify the police and businesses that have given them credit. The Federal Trade Commission offers an ID Theft Affidavit that can be filled out and copied to notify others of an identity theft.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms may not be used.

____ **1.** Federal agency that sets standards for foods and drugs produced or marketed in the United States

____ **2.** A consumer's plan for receiving and using income

____ **3.** A choice to buy or not buy a product so that your satisfaction is the greatest possible per dollar spent

____ **4.** A system that assigns a number or score to each consumer, indicating whether that person is a good or bad credit risk

____ **5.** Borrowing an amount of money that will be repaid through a series of payments over a fixed period of time

____ **6.** Anyone who uses a good or service

____ **7.** Loan for which property or other asset is pledged to back its repayment

____ **8.** The fraudulent use of a consumer's identity to obtain credit or to use that person's financial accounts

____ **9.** Amounts charged to an account that involves variable payments over time

____**10.** A measure of your dependability to repay a loan

____**11.** A person's record of paying bills and debts over time

a. budget
b. cease and desist order
c. comparison shopping
d. consumer
e. consumer loan
f. consumer sales credit
g. CPSC
h. credit history
i. credit rating
j. credit scoring
k. creditworthy
l. EPA
m. FDA
n. FTC
o. identity theft
p. personal finance
q. rational consumer choice
r. secured loan
s. unsecured loan

Review Economic Concepts

12. Which of the following should be included as predicted income when you create your personal budget for next year?

a. the amount you have deposited in your checking account

b. the amount you expect to earn from working as a lifeguard next summer

c. the amount your grandmother gave you for your birthday last year

d. the amount you won as a door prize at a store's grand opening

13. __?__ goals are things you hope to accomplish within a year or less.

14. Before you buy a product, you should ask yourself each of the following questions except
    a. Do I really need this product?
    b. Can I afford to pay for this product?
    c. Will this product impress my friends?
    d. Is this the best deal available for this product?

15. **True or False** A one-month budget worksheet includes predictions of your expected income, saving, and spending for a month.

16. When you comparison-shop you should choose the product that you think
    a. has the best value per dollar spent.
    b. has the best quality.
    c. has the best style or appearance.
    d. has the lowest price.

17. **True or False** A decision to use cash to make a purchase is always better for a consumer than a decision to use credit.

18. Why is the amount you borrow likely to be less than the amount you must repay?
    a. Prices are likely to go up in the future.
    b. You must pay interest on the funds you borrow.
    c. The money you borrow will be taxed.
    d. Your income is likely to be greater in the future.

19. Which of the following is an example of a consumer loan?
    a. A construction firm borrows $150,000 to build a house.
    b. A worker borrows $2,000 to buy a set of tools he needs to build the house.
    c. A husband and wife borrow $200,000 to buy a house.
    d. A husband and wife charge the price of a table for their new house on their credit card.

20. **True or False** Credit bureaus gather, maintain, and share financial information about almost every adult in the United States.

21. Which of the following is not one of the three Cs of credit?
    a. credit rating
    b. capacity
    c. capital
    d. character

22. Your credit __?__ is a number assigned to you in your credit file that indicates whether you are a good or bad credit risk.

23. Which of the following is a good way for a young person to begin to establish a positive credit history?
    a. Always save and pay cash for things you buy.
    b. Borrow to buy one expensive item and then pay off the loan over many years.
    c. Save regularly and use your savings to back a small loan that you pay off on time.
    d. Always carry a balance on your account so you pay interest to the bank.

24. **True or False** If you find you cannot make a payment on a loan, you should go on vacation until you have enough money to pay your debt.

25. **True or False** It is a good idea to review your credit file at least once a year.

26. **True or False** All states and many local governments have agencies that are responsible for protecting consumers.

27. Which federal agency protects consumers from unsafe food?
    a. the Consumer Product Safety Commission (CPSC)
    b. the Food and Drug Administration (FDA)
    c. the Environmental Protection Agency (EPA)
    d. the Federal Trade Commission (FTC)

28. If the Federal Trade Commission finds that a business is making false claims in its advertising, it may issue a __?__ against the firm.

29. Which federal agency protects consumers from a toy that could cause a child to choke?
    a. the Consumer Product Safety Commission (CPSC)
    b. the Food and Drug Administration (FDA)
    c. the Environmental Protection Agency (EPA)
    d. the Federal Trade Commission (FTC)

30. Which federal agency will provide consumers with an ID Theft Affidavit to use to notify financial institutions?
    a. FDA
    b. FTC
    c. EPA
    d. FCC

Apply Economic Concepts

31. **Choose Cash or Credit** You would like to purchase a used car for $4,000. You have $1,000 for a down payment, sales tax, and other fees. You still need to borrow $3,500. The dealer offers to arrange a loan that will require you to pay $110 per month for the next three years. If you agree to this, how much will you end up paying for the loan? Instead, you could put off buying a car until you save enough to pay cash. What factors should you consider when you make your choice? Explain your answer.

32. **Decide How Much to Pay** You just received your monthly credit-card statement. The balance you owe is $228.39. You have $239.00 in your checking account and only $4.00 in your wallet. You could pay the entire amount to avoid an interest payment. That would leave you with almost no ready cash for anything else. Or, you could make the minimum payment of $18.43. Your account charges 1 percent per month on unpaid balances. How much would the interest be if you pay only the minimum (you would be charged interest on the entire balance if you don't pay it all)? Should you pay off the entire balance? Explain the benefits and costs of your choice.

33. **Evaluate a Food Label** Copy the nutritional label for a food product you frequently consume, such as a breakfast cereal or frozen pizza. List all items on the label that you recognize and understand along with their definitions. Make a second list of items that you do not recognize or understand. Look up the meaning of each of these items in an encyclopedia or online. How useful is the label to you? Do you believe the food product is a healthy part of your diet?

34. **Write a Letter to the CPSC** Imagine that you recently purchased a Golden Glow gas grill for your patio. You followed the directions carefully when you assembled the grill. But when you went to light it, there was a small explosion and a ball of fire appeared below the grill next to the gas regulator. You quickly turned off the gas at the tank, and the fire went out. Next you reread the instructions to be sure you had made no mistakes. Convinced that you had done it right, you tightened all the fittings on the grill and tried to light it again. This time there was a bigger explosion that singed the hair on your arms. You intend to take the grill back to the store where you bought it, but you also want to inform the Consumer Product Safety Commission so it can take action to protect other consumers. Write a letter to the CPSC explaining what happened and what you think the agency should do.



35. Access **EconDebate Online** at thomsonedu.com/school/econxtra. Read the policy debate entitled "Should anti-pollution standards be strengthened?" Analyze this issue from both points of view, and write one or two paragraphs summarizing each side. Then write a paragraph explaining your point of view on this issue.

21 Managing Your Money

21.1 Saving

21.2 Investing

21.3 Insurance



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CONSIDER

Why is keeping your savings in a bank a better idea than storing it in a box under your bed?

Why should you keep track of the deposits and withdrawals you make from your bank accounts?

How can you tell if you're reading a scam e-mail?

Should the government continue to sell savings bonds?

Why are higher-income families more likely to own corporate stock?

Would you rather own blue chip stocks or growth stocks, and what's the difference?

You are talking on your cell phone while driving, and you run into your neighbor. Who pays for the damages?

Point Your Browser
thomsonedu.com/school/econxtra

21.1 Saving

Objectives

- Describe benefits people receive from saving part of their income.
- Identify and describe the types of deposit accounts offered by banks.

Overview

You save when you spend less than you earn. When you save you must decide how to store your savings. Cash kept on hand may be lost or stolen, or it may lose value if prices increase. For these reasons, you should deposit your savings in a bank or other financial institution. Banks offer many types of accounts that provide security, combinations of convenience and access to savings, and, in most cases, interest to help protect your savings from inflation. To make rational decisions, you should identify and evaluate your savings alternatives to find those that are best suited to your individual goals and financial situation.

Key Terms

saving

return

compound interest

annual percentage yield (APY)

certificate of deposit (CD)

money market account

In the News

Savings Rate Trends Toward Dissaving

In August 2005, headlines across the nation said that the U.S. savings rate had fallen to its lowest level since 1933, when the economy was at the bottom of the Great Depression. The savings rate is the percent of after-tax income that people save rather than spend. In 2005 this value was a negative 0.5 percent. For the first time in more than 70 years, Americans collectively spent more than they earned. According to economists, what they were doing was dissaving. Study the table to learn more about the U.S. savings rate from 1950 to 2005.

U.S. Savings Rate, 1950–2005

Year	Rate	Year	Rate	Year	Rate
1950	6.3%	1970	8.0%	1990	7.0%
1955	5.7%	1975	8.6%	1995	4.6%
1960	4.9%	1980	5.6%	2000	2.3%
1965	6.0%	1985	4.4%	2005	–0.5%

THINK ABOUT IT

What may have happened to cause people to spend more and save less? What might dissaving mean for the future of the United States and individuals if it continues? Do you save now? Do you plan to save in the future? Why or why not?

Sources: "The Zero-Savings Problem," CNNMoney.com, August 3, 2005; *Statistical Abstract of the United States*, 1970, 1981, 1991, and 2001.

Saving for Your Future

saving
The act of choosing not to spend current income

Each pay period, you, as a worker, will receive income you will either spend or save. Economists define **saving** as the act of choosing not to spend current income. Saving involves a trade-off. By choosing to save, you trade the satisfaction from buying something now for the satisfaction you may receive from buying something in the future. One major benefit of saving is that you can accumulate enough to buy expensive products such as a home or an automobile.

Probably the most important benefit of saving is the security it provides against unexpected events. People have no way of knowing whether they will be struck by a truck, fall down a manhole, become ill, or be injured in some other way. Maybe a storm, earthquake, fire, or natural disaster will destroy their homes. Every year, thousands of workers lose their jobs through no fault of their own. Any of these events can reduce incomes to zero. If any of these unfortunate events happen, people who have saved will be able to maintain their standard of living and recover their financial health more easily than those who have not.



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Many people save money so they can afford to purchase expensive items in the future, such as a home of their own. What things do you want that you will need savings in order to afford?

Creating a Savings Plan

Trading the ability to buy something you want now to buy something in the future usually is not an easy choice. Experts argue that creating and following a savings plan is the best way to save successfully. These steps should help you improve your chance of reaching your savings goals:

- Have a clear idea why you are saving and how much you want to save. It is easier to save if you have a particular objective in mind—such as buying a car or paying for college.
- Create a strategy for saving. You might decide to set aside $20 from every paycheck before you spend for anything else. Or, if the amount you earn varies from week to week, you might decide to save 10 percent of your pay instead of a specific amount.
- Save automatically if you can. Some employers will deposit a portion of your salary in your bank account automatically. Funds you never see may be easier to save.
- Reward yourself when you reach savings goals. If there is something you enjoy that doesn't cost much, you could commit to doing this each time you reach a savings goal. You might take a hiking trip to a state park each time your save another $500, for example.

Storing Your Savings

When you choose not to spend your income, you are immediately forced to make another decision: where to store the money you have not spent. Keeping savings in a box under your bed, for

example, is one possibility. However, this would not be a wise choice. Money kept at home or in your wallet or purse might be lost or stolen. Inflation poses another obstacle. As prices increase, the purchasing power of money you keep on hand will fall. Better to store your savings where it will earn a **return**. Return is income earned from funds that are not spent. Earning a return is another major benefit of having a savings plan.

The return you could earn from your savings depends on how you store it. Obviously, money stored in a box under your bed earns no return. If you deposit your savings in a bank, however, the bank will pay you interest. The rate of interest is your return. Interest will help protect your savings against inflation. In addition, a bank provides security for your savings because the FDIC or a similar agency of the federal government insures your deposit up to a maximum of $100,000.

There are choices you could make other than storing your savings in a bank or under your bed. For example, you could lend your savings to a friend who wants to start a bicycle repair business. She might offer to pay you 10 percent interest. But if her business fails, you might lose your savings as well as any interest you are owed. When you decide where to store your savings, there is a trade-off between risk and return. In general, the greater the expected return, the greater the risk of losing your money.

Methods of saving that involve more risk are discussed in Section 21.2 of this chapter, entitled "Investing." Methods of saving that involve lower degrees of risk include depositing money in bank accounts as well as purchasing U.S. savings bonds. Saving through the purchase of U.S. savings bonds is discussed in the Connect to History feature on page 649. The various types of bank accounts will be discussed next.

return
Income earned from funds that are not spent

✓ CHECKPOINT

What benefits do people receive from saving part of their income?

Types of Bank Accounts

In Chapter 16 you learned that there are several types of financial institutions that accept deposits from individuals. These include banks, savings and loan associations, savings banks, and credit unions. These institutions provide similar services, and all will be referred to as "banks" in this chapter.

Ask the Xpert!
thomsonedu.com/school/econxtra
How are banks different from other businesses?



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Storing your savings in a bank is a much safer option than storing it under your bed. What other benefits do you receive from storing your savings in a bank?

Banks earn income by accepting deposits from savers and then lending these funds to borrowers. Banks pay interest to most depositors. They charge borrowers higher rates of interest. The difference between the interest paid depositors and the interest charged borrowers allows banks to earn a profit. There are many types of deposit accounts in which you may store your savings. These include time deposits, savings accounts, checking accounts, and money market accounts. The balances held by individuals in various types of bank accounts in recent years are presented in Figure 21.1.

Savings Accounts

compound interest
Computed on the amount saved plus the interest previously earned

A savings account allows you to deposit or withdraw your savings at any time and earn a relatively low but fixed rate of interest. The bank records deposits and withdrawals from savings accounts electronically. Depositors are expected to maintain a separate record of their transactions to check against monthly statements they receive from their bank. Banks pay relatively low rates of interest on savings accounts because banks do not know for how long they will have use of the funds. In 2006 most savings accounts earned between 2 and 3 percent annual interest.

annual percentage yield (APY)
Formula banks must use to calculate interest they pay on deposits

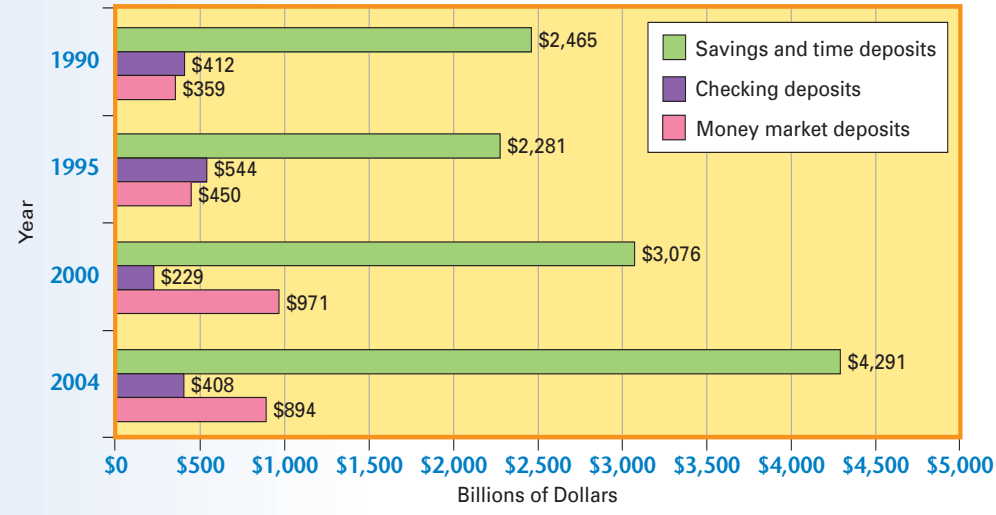
COMPOUND INTEREST

Deposits usually earn **compound interest**. Suppose you deposit $100 in a bank account, and the bank agrees to pay 6 percent interest compounded twice a year. After six months, the bank would pay 3 percent of $100, or $3, to increase the value of your deposit to $103. Then after the next six months, a further 3 percent interest would be calculated on this new amount. At the end of the year, you would receive an additional $3.09, bringing your deposit to $106.09. The extra nine cents would be the additional interest you earned on the interest you already had been paid.

You might think that nine cents isn't important. But when interested is compounded every day over many years, it can make a huge difference. A 10 percent interest rate on a deposit of $1,000 will boost the deposit to $2,718 in ten years!

Banks usually advertise their accounts with names such as "Gold Returns" or "Premium Plus." How can you tell which bank is making the best offer? *Federal law requires that all banks calculate the interest paid on deposits in exactly the same way.* It is called the **annual percentage yield (APY)**. Because all banks must use the same calculation, you know that an account that has an APY of

Amounts Deposited in Bank Accounts, 1990–2004 — Figure 21.1



Checking deposits fluctuated between 1990 and 2004 but ended up about the same as where they began. Other bank deposits were higher in 2004 than in 1990.

Source: *Statistical Abstract of the United States*, 2006, p. 477.

4.53 percent pays more than one offering an APY of 4.44 percent, no matter what the bank calls its interest rate.

Time Deposits

When you open a time deposit, you commit to leave an amount of money in your account for a specified period of time. This duration may be as short as several days or as long as ten years. Time deposits typically are for six months or for one, two, or five years. The most common type of time deposit is known as a **certificate of deposit** or **CD**. A certificate of deposit is a savings instrument with a fixed interest rate and a fixed maturity date.

When you open a CD, you deposit an amount of money and commit to leave it on deposit for a specific period of time. Banks are willing to pay higher interest on CDs because they will have use of these funds for an extended and predictable period of time. This greater certainty allows banks to use these funds in ways that will earn them a greater return. This greater return allows banks to pay depositors more. In 2006 most CDs paid between 4 and 5 percent, depending on their term. The longer a depositor agrees to leave funds on deposit, the higher the interest paid.

The holder of a CD may not withdraw funds prematurely without paying a penalty. A penalty usually equal to six months or more of interest is charged for early withdrawals.

certificate of deposit (CD)
Savings instrument with fixed interest rate and fixed maturity date

Checking Accounts

A checking account allows a depositor to make payments from the account by

e-conomics

A FOOL AND HIS MONEY ARE SOON PARTED

On January 25, 2006, the Federal Trade Commission released its annual report for 2005 listing the top ten consumer complaints filed online and via telephone. Internet-fraud complaints amounted to 46 percent of all the complaints filed. One common complaint involves "foreign-money-offer" scams in which a person in Nigeria or another country desperately needs your bank account information in order to send you money. A new version of the Nigerian scam involves the Pope and the Vatican. It is addressed to "Your Humble Goodself" and sports a return e-mail address which includes the domain "vaticanchurch.com." This letter declares that recipients of the e-mail must be "honest, straightforward, and God-fearing." The e-mail states that the recipient has been chosen to be the secret distributor of charity funds to the needy people of the world. The letter further requires that the recipient be "an aristocrat or an influential rich individual with a designated bank account in a reputable bank, which can completely and always accommodate the released charity funds without the need of questioning by relevant authorities." In exchange for providing your private bank account information, a small fee to cover the transfer of funds, and total secrecy, you will be paid a commission of 10 percent of the total funds you distribute to the poor. Approximately 8 percent of complaints to the Federal Trade Commission come from people who have fallen for this or a similar scheme.

THINK CRITICALLY

Reread the quotations from the e-mail. What key words within those quotes suggest that you are reading a scam e-mail? Explain your answer.

Sources: Federal Trade Commission web site, www.ftc.gov/opa/2006/01/topten.htm; and www.quatloos.com/brad-c/humble_goodself.htm

writing checks or using a debit card directing the bank to pay someone from the account. There are minor differences between checking accounts offered by different banks, but they all work in about the same way.

ADVANTAGES OF CHECKS OR DEBIT CARDS

Probably the most important advantage of making payments with checks or debit cards is the safety they provide. You do not need to carry large amounts of cash. When you use checks or debit cards, there is no doubt that payment has been made. Banks keep a permanent record of all payments made from checking accounts.

Checking account statements can be useful when you evaluate your budget or prepare your income tax return. Finally, some checking accounts pay a modest rate of interest on deposits. To earn interest on checking accounts, you usually must have a substantial amount on deposit, at least several thousand dollars.

OPENING AND MAINTAINING A CHECKING ACCOUNT

The first step in opening a checking account is to visit a bank that is conveniently located. Investigate the checking accounts it offers, and compare these with offerings of other banks you might choose. When you finally decide where to open your account, you will be required to sign papers and deposit funds into the account. You initially will be provided with a few checks. You may use them immediately. Checks with your name and address printed on them will be mailed to you. You also will receive a check register in which to record deposits you make and checks you write. In addition, you usually will receive a debit card, which you can use to tap into your checking account balance at ATMs and at many retailers.

Each time you write a check or make a deposit, enter the amount in your check register and calculate your new balance. Also keep the records from using a debit card. At the end of each month, your bank will send you an account statement listing your deposits, checks, and debits you have written that have been paid. *You should reconcile your checking account each month to catch any mistakes and to avoid overdrawing your account.* Banks charge a substantial fee (approximately $40) for each overdraft.

To reconcile (or balance) your account, you should compare your records of each deposit, check written, and debit card transaction with those recorded by your bank. Some checks you wrote may not yet have cleared, or have been paid by the bank. These outstanding checks should be taken into account when you calculate your balance. You also should make adjustments for any fees you have been charged and interest you have earned. If your balance still does not match the amount the bank says you have on deposit, check your calculations. If you can't find any mistakes, contact your bank for assistance.

CHECKING ACCOUNT FEES

There are two types of fees banks charge for most checking accounts. Unless you are able to maintain a substantial balance in your account, you cannot avoid paying them. These fees are a *monthly maintenance charge* and a *service charge* for each check written. Investigate these fees before you open your account because different banks charge different amounts.

The monthly maintenance fee is charged to cover the bank's cost of maintaining records for your account. It usually is from three to five dollars per month. The service charge is imposed on each check you write. It covers the bank's cost of processing your check. Most banks charge from fifteen to thirty cents per check you write. Banks usually do not impose a service charge on debit card transactions. Your check-writing habits will determine which type of account is best for you. If you write few checks, it is more important to choose an account with a low maintenance fee. If you write many checks, it can be better to choose an account with a low service charge.

Money Market Accounts

Like savings accounts, **money market accounts** allow you to deposit or withdraw funds at any time, though most banks limit the number of transactions per month and the size of transactions.

money market accounts
Bank accounts that allow people to deposit or withdraw funds at any time and for which interest rates vary from day to day

Money market accounts are different from savings accounts because the rate of interest they pay varies from day to day as interest rates throughout the economy change. (Chapter 16 introduced these accounts by their more formal name: money market mutual fund accounts.)

Money market accounts usually require a minimum deposit of $500 or more to open. The greatest advantage of money market accounts is that they usually pay a slightly higher rate of interest than savings accounts. In 2006 most money market accounts paid between 3 and 4 percent interest.

✓ CHECKPOINT

Name and define the four types of bank accounts.

TeamWork

Working with a partner, investigate the checking account options available at two local banks. Find out the fees each bank charges for monthly maintenance and service charges for the number of checks written and overdrawn checks. Think of other considerations involved in choosing a bank for your checking account, such as location, hours of operation, and availability of ATMs. Determine which bank offers the better option for each partner's personal needs.



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Evaluate the message on this billboard advertisement. What do you think the "points" this bank is offering represent?

Assessment 21.1

Key Concepts

1. Why is it important to set your financial goals before you create a savings plan?
2. Give two reasons why you should not store your savings in a box under your bed.
3. Why do certificates of deposit pay a higher rate of interest than other types of accounts?
4. What is the greatest advantage of making payments with checks rather than cash?
5. What two costs do most depositors pay to open and use a checking account?
6. What is the difference between the way that money market and ordinary savings accounts pay interest?

Xtra! Study tools
thomsonedu.com/school/econxtra

Graphing Exercise

7. Use data from the table to construct a line graph that shows how the value of U.S. savings bonds owned by individuals has changed in recent years. In which years were more bonds redeemed (cashed in) than were purchased? Can you think of any reasons why the total should have fallen in these years?

Value of U.S. Savings Bonds Owned by Individuals in billions of dollars

Year	Value
1995	$181.5
1996	$184.4
1997	$182.6
1998	$180.7
1999	$166.5
2000	$177.7
2001	$179.5
2002	$185.5
2003	$192.6

Source: *Statistical Abstract of the United States,* 2005, p. 321.

Think Critically

8. **History** For many years during the nineteenth century, there was no effective federal regulation of banks in the United States. There also was no deposit insurance. If a bank failed, there was a good chance that its depositors would lose part or all of their savings. Explain why many people kept their savings in their homes at that time rather than depositing it in banks. What impact might this have had on the economy as a whole?
9. **Mathematics** Calculate the value of a $4,000 deposit that was made two years ago in a CD that has an Annual Percentage Yield (APY) of 5.0 percent. To make this calculation, multiply the original deposit by 1.05 twice (once for each year the funds were on deposit). Now complete the same calculation for a CD that pays 5.2 percent. This time multiply the original deposit by 1.052 two times. How much more will the second CD pay? Why does the requirement that banks report interest rates as APYs make it easy for savers to earn the most from their deposits?

CONNECT TO **HISTORY**



Patriotism and Savings Bonds

Every war that the United States has fought has, to an extent, been paid for by government borrowing. This was true of the Revolutionary War, Civil War, Spanish-American War, World Wars I and II, and the Korean and Vietnam wars. In many cases, ordinary American citizens have been encouraged by the government to buy U.S. savings bonds to help finance a war. This is the historic foundation for the savings bonds millions of Americans buy and hold today.

The U.S. Treasury currently issues two types of savings bonds: Series EE and Series I bonds. Banks and other financial institutions sell these bonds for the government. Series EE bonds are sold for values that range from $50 to $10,000. When a Series EE bond is purchased, its price is one-half of the amount printed on the bond. While the bond is held, its value increases until it reaches or exceeds the amount printed on the bond. Currently, Series EE bonds pay interest for 30 years, after which they must be cashed. Series EE bonds are safe and pay interest that is not taxed by state or local governments.

Series I bonds, or inflation bonds, pay a fixed rate of interest plus the current rate of inflation. Once you buy a Series I bond, the fixed portion of the rate remains unchanged for the life of the bond. The inflation portion is adjusted twice each year: in May and in November. The advantage of owning Series I bonds is that their interest rate will always exceed the inflation rate.

The direct forerunner of today's savings bonds were Liberty Bonds sold to ordinary citizens to help finance World War I. Although the price of a Liberty Bond was quite high for the time ($100 when most Americans earned between $1,000 and $2,000 per year), the Treasury also sold Savings Stamps for $5 that could be accumulated and eventually traded for a bond. During World War II, buying "savings bonds" was promoted as a patriotic duty that all citizens should undertake to help defeat the Axis powers. Savings bonds were marketed in other ways. Treasury department records identify seven messages sent to U.S. citizens to encourage them to buy savings bonds. Among these were the ideas that buying savings bonds was a way to finance the purchase of homes, cars, and other consumer goods after the war. Buying bonds was said to be a good way to teach children about thrift. They were a way to build a family nest egg to protect against unforeseen accidents or illnesses. Perhaps the most interesting idea was that owning savings bonds inspired people to learn more about their government and caused them to take a greater interest in politics. This would make them better citizens and help create a more honest and more efficient government.

The marketing program used during and after World War II was much different from how savings bonds are marketed today. In fact, in 2005 the marketing budget for savings bonds was eliminated. You will no longer see ads encouraging you to purchase savings bonds. Treasury officials argue that the excess paperwork involved in issuing and redeeming savings bonds increases the government's borrowing cost. They believe the government can borrow the funds it needs from other sources at a lower cost.

Although selling savings bonds may be relatively expensive for the government, owning them probably is the safest investment you could make. Savings bonds offer a higher return than most bank accounts. The Series I bond protects you against inflation. Further, interest earned from any federal bond, including savings bonds, is not taxed by either state or local governments. Interest paid by banks and on corporate bonds is taxable by governments.

THINK CRITICALLY

Do you think the government should encourage more people to buy savings bonds? Explain your point of view on this issue.

21.2 Investing

Objectives

- Compare and contrast investing in corporate stock versus investing in corporate bonds.
- Examine the sources available for assistance with managing your investments.

Overview

Although most bank accounts pay interest, many savers choose to invest a portion of their funds in ways they hope will earn them a higher return. To achieve this, they must be willing to risk losing some or all of the funds they invest. The options include investing in corporate stocks or corporate bonds. These investments offer many combinations of risk and retun. To make rational investment decisions, you should identify and evaluate investment alternatives to find those best suited to your individual goals and financial situations.

Key Terms

investing

corporate stock

diversification

mutual fund

corporate bond

financial planner

In the News

The Motley Fool Spreads and Makes Investment News

When it comes to investing, nearly every person you know, and some you don't, will offer you an opinion or a hot tip. Smart investors, however, carefully research investment opportunities by reading and asking questions before they put their money on the line. The Internet offers millions of web sites full of investment information, and spammers send hundreds of thousands of "get-in-now-or-lose-big" e-mails in an attempt to lure investors with tales of huge returns for small outlays. In the maze of information and misinformation, The Motley Fool site has risen above the others with down-to-earth and often humorous news and advice for would-be investors. Started in 1994 by brothers David and Tom Gardner in cooperation with America Online, The Motley Fool site offers the latest news to help you make wise investment decisions. The brothers—who claim they learned everything they know from their father, a lawyer and economist—created a "Fool Portfolio" of stocks with their own money. "Fools" from every country in the world and every walk of life could log on and learn from the duo's successes and failures. The Motley Fool web site offers advice ranging from retirement strategies, stock picks, how-to guides, and a vast repository of sound information about personal finance. The Gardner brothers have published eight bestselling books, write a nationally syndicated weekly newspaper column, and have created The Motley Fool Radio Show, which is syndicated by NPR and broadcast on more than 100 radio stations nationwide.

THINK ABOUT IT

Imagine you have $1,000 to invest. How would you decide where and how to invest it? How would you decide which advice is sound and which is not?

Sources: www.fool.com/press/about.htm;
http://n02.moneycentral.msn.com/provider/provider.asp?feed=FOOL

Invest to Earn a Return

In Chapter 11 you learned about investment in the context of the national income accounts. Investment was defined as the purchase of new plants, new equipment, new homes, and net increases in inventories. A discussion of personal finance takes a much broader view of investment. In that broader perspective, **investing** is defined as using your savings in a way that earns income to create a return. When you deposit your savings in a bank account that pays interest, you are investing. However, in the context of personal finance, *investing more generally refers to using your savings to earn a greater return than is paid by banks, and investing involves more risk than leaving your funds in a bank.* Although there are many ways of investing your savings, two invest-ments are described here in some detail: corporate stocks and corporate bonds.

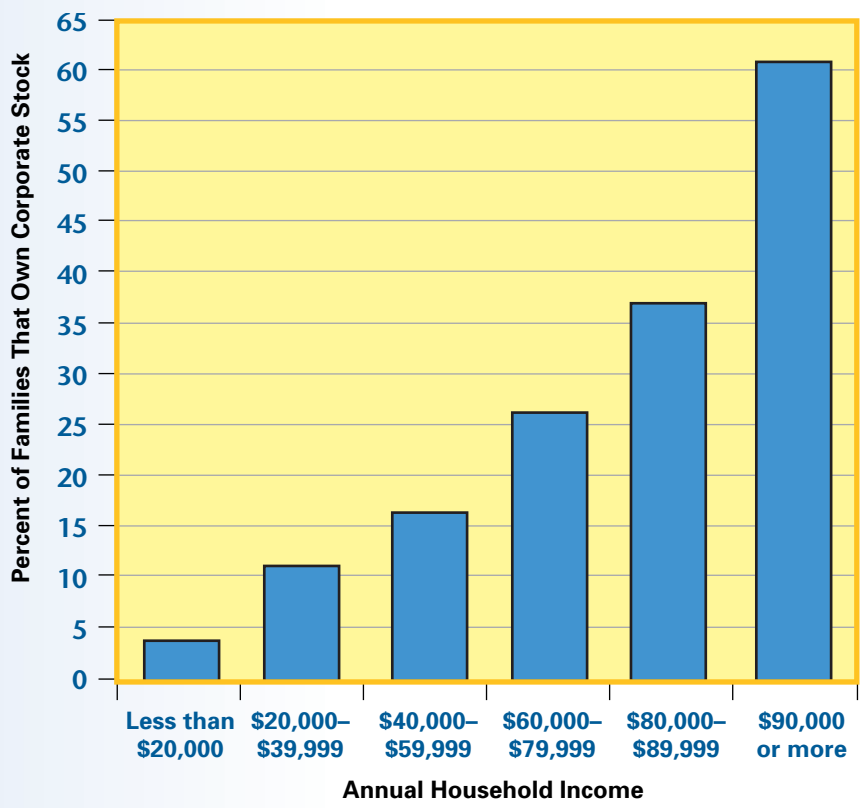
Investing in Corporate Stock

As introduced in Chapter 10, when corporations are formed they sometimes raise funds by selling shares of ownership, or stock, to the public. Investors purchase shares of **corporate stock** because they hope to earn a return. Stockholders may earn a return from their stock in two ways. They may receive a share of the corporation's earnings as a dividend payment, or they may earn a capital gain if they sell their stock for more than they paid to buy it. There is no guarantee a corporation will earn a profit or pay dividends. If the firm does not do well, the value of its stock may fall and its stockholders might suffer a capital loss if they sell their shares. You should not invest in stocks money you need for your daily expenses. If you have only a few hundred dollars saved, you should keep your savings in bank account and wait to invest in stocks until you are in a stronger financial position. Consider Figure 21.2, which lists the share of U.S.

corporate stock
Shares of ownership in a corporation

investing
Using your savings in a way that earns income to create a return

Percent of Families Owning Corporate Stock by Level of Income — **Figure 21.2**



Why are higher-income families more likely to own corporate stock?

Source: *Statistical Abstract of the United States*, 2006, p. 760.

families that own corporate stock according to family income.

TWO TYPES OF CORPORATE STOCK

There are two types of corporate stock: common and preferred. Although both types represent ownership in the corporation, there are important differences.

Shares of *common stock* give their owners one vote per share when important decisions are made for the firm. These decisions include electing a board of directors to oversee the operation of the firm. Owners of common stock do not receive a dividend unless one is declared by the firm's board of directors. The amount of any dividend may change over time according to other financial needs of the corporation or the amount of profit earned. If the corporation is successful, it could pay large dividends to its common stockholder. If it does poorly, the corporation may pay common stockholders no dividends at all. For these reasons, buying common stock is regarded as relatively risky when compared to other investments you might make.

Shares of *preferred stock* do not give their owners a vote in how the corporation is operated. They do, however, provide a fixed dividend that is equal to a percentage of the original sales price of the stock. A corporation generally will pay this fixed dividend each year unless it suffers a large loss. In such a case, the board of directors may choose not to pay a dividend to preferred stockholders. If the firm later returns to profitability, all missed preferred-stock dividends must be paid before dividends are paid to common stockholders. For these reasons, buying preferred stock has a lower risk than buying common stock in the same firm.

WHY DOES THE VALUE OF STOCK CHANGE?

The price of corporate stock changes for the same reason as the price of any other good or service. It is all a matter of demand and supply. If a corporation is successful, many people will want to buy shares in that business, but few current owners will want to sell their shares. This will create a shortage of the shares that will force their price to increase to reach equilibrium. Alternatively, if a corporation is unsuccessful, few people will want to buy its shares while many current owners will want to sell the shares they own. This will create a surplus of the shares that will force their price to fall to equilibrium. *Anything that causes people to want to own either more or fewer shares of stock in a particular corporation will cause the value of that firm's shares to change.*

RISK VS. RETURN IN BUYING STOCK

There are important differences in the nature of common stock you might buy. Purchasing *blue chip stock* in a large, successful, established firm such as General Electric or Procter & Gamble involves less risk than buying *growth stock* in a new corporation that may have innovative products but no record of success or of dividends. The share price may rise quickly if the new firm is successful, or it may become worthless if the firm fails. Growth stocks offer the possibility of a higher return, but this also involves greater risk. An established firm is more likely to perform well over time and to pay regular dividends even if it does not grow rapidly in the future. Again, stock ownership offers the expected relationship between the risk and return.

BUYING AND SELLING SHARES OF STOCK

Most shares of stock that are sold in the United States are traded in one of two

NET Bookmark

You have heard about the stock market crash of 1929 that sent the United States into the Great Depression. However, you may not know about the very first stock market crash, called the Duer Panic of 1792. Log on to thomsonedu.com/school/econxtra to access *American Heritage* magazine. Read the article about America's first stock exchange crash. Write a brief paragraph explaining how Secretary of the Treasury Alexander Hamilton prevented panic from spreading and bringing down more financial institutions.

thomsonedu.com/school/econxtra

ways. They are either sold through a formal stock exchange such as the New York Stock Exchange (NYSE) or they are sold through an electronic market called the National Association of Securities Dealers Automated Quotation System (NASDAQ).

THE NEW YORK STOCK EXCHANGE

The New York Stock Exchange and other formal exchanges in the past have been physical locations where shares of stock were bought and sold. Businesses or individuals purchased memberships, or seats, on these exchanges. A seat gives its owner the right to buy or sell shares of stock on the exchange. Members would then agree to buy or sell shares of stock for non-members for a fee. All brokerage firms, such as Merrill Lynch, own seats and charge their customers to execute stock transactions for them.

Suppose a person wants to sell 100 shares of IBM. She might call or visit the office of a brokerage firm in Denver, Colorado, to place her *sell order*. This order would be sent to that firm's office at the NYSE in New York City. About the same time a different person in Sarasota, Florida, might call or visit his broker's office and ask to buy 100 shares of IBM. This time a *buy order* would be sent to his firm's office at the NYSE. Representatives of these two firms would meet at a desk on the floor of the NYSE that is designated to handle IBM trades. With the help of a specialist who deals in IBM stock, the transaction would be completed. In recent years some trades on the NYSE have been carried out electronically, and more are likely to be done that way in the future.

THE NASDAQ

Now imagine that someone wants to sell 100 shares of Microsoft stock, while a different person wants to buy 100 shares. Microsoft stock is listed, or traded, on the NASDAQ. This time the two brokerage firms enter their buy and sell orders in a computer system that electronically matches the orders and completes the transaction. Trades that take place on the NASDAQ are much faster than those that occur on the NYSE. This means they are less costly

Span the Globe

Stock Exchanges Proliferate

From the Athenian *emporion* to Rome's *collegium mercatorum*, flourishing societies have always had gathering places where important traders came together at established hours to transact business. Today's world is no exception. Stock exchanges, the modern equivalents of the *emporion* and the *collegium mercatorum*, are popping up all over the globe. South Africa has two, as does Indonesia. Japan and the United Kingdom have five each. Russia has one. Canada has six, and the United States has eleven with more on the way. In the mood for a trading vacation? Stock exchanges in the Bermudas or the Cayman Islands await. All told, nearly 150 stock exchanges are open around the world. All the continents except Antarctica have exchanges. The total value of the corporations listed on a given exchange, also called the total market capitalization, varies widely. The largest is the New York Stock Exchange, showing about $14 trillion dollars invested. Tokyo's stock exchange is the second largest at $4.7 trillion. The upstart NASDAQ is close behind at $3.8 trillion, having recently overtaken the London Stock Exchange's $3.3 trillion. At the bottom end, the Karachi Stock Exchange in Pakistan has a total market capitalization of about $55 billion, or about one-sixth the market capitalization of General Electric. Because of the ability to shift funds almost instantaneously, stock traders now find they can keep their money busy 24/7, in whatever exchange the sun is shining.

THINK CRITICALLY

Is the large number of stock exchanges a good or bad sign? Explain your answer.

Sources: Stock Exchanges Worldwide Links: www.tdd.lt/slnews/Stock_Exchanges/Stock.Exchanges.htm; Stock Exchanges, History of, *Encarta Encyclopedia*, 2006.

to the brokerage firms. They also can be carried out when formal exchanges are closed. For these reasons, more transactions take place on the NASDAQ than on the NYSE, and the NYSE is gradually moving toward electronic transactions.

CREATE YOUR STOCK PORTFOLIO

Suppose you put all your savings in a firm that you believed was about to become a big success. But, you were wrong. The business failed, and you lost everything. Investing in only one firm is never a rational choice. The rational decision for investors is **diversification**. This means investing in a wide variety of corporations so that if one does poorly, others may succeed, allowing your investments to grow.

diversification
Investing in a wide variety of firms

mutual fund
Financial organization that accepts funds from many people and invests them in a variety of stocks

When you buy stocks, you are creating a stock portfolio. Your portfolio should be diversified and should reflect your goals and personal financial situation. Suppose you are supporting a family on a limited income and have only a little to invest. Because you can't afford to lose much, you should buy a variety of blue chip stocks that may grow in value over time, pay regular dividends, and face little chance of losing much value. If you are financially established and can afford to lose some of your funds, you might choose to invest in some higher-risk growth stocks. The value of these shares might fall, but you can afford to take the loss. Or, they might increase rapidly, in which case you would benefit from their growth. The best portfolio for one person may not be right for someone else.



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In creating your stock portfolio, you will want to include stock from blue chip companies such as Procter & Gamble as well as some higher-risk growth stocks. Why is it important to diversify your portfolio with both types of stocks?

MUTUAL FUNDS

Many people would like to invest in stocks but lack the time or skill to select stocks and keep track of them. Or, they may have so little to invest that they are not able to diversify their choices. For these people, investing through a mutual fund often is a wise decision. A **mutual fund** is a financial organization that accepts funds from many people and invests them in a variety of stocks. Individual investors purchase a small part of the fund and therefore a portion of the investments the fund makes. The value of their investment changes with the value of the stocks owned by the fund. When the fund earns income from dividends or from capital gains, this income may be distributed to the mutual fund owners or reinvested to buy more corporate shares. *The big advantage of investing in mutual funds is that such investments are automatically diversified across the many different stocks owned by the fund.* What's more, the fund employs experts to make decisions about what to buy, when to buy it, and when to sell.

COSTS OF OWNING A MUTUAL FUND

Mutual funds may either be load or no-load funds. *Load funds* are marketed by sales people who receive a commission of roughly 6 percent of the amount invested either when you buy the fund or when you sell it. *No-load funds* do not charge a sales commission. To purchase shares in these funds, you must contact the fund, read literature that is provided by the fund to decide whether it is right for you, and send a check to the fund to purchase its shares. All mutual funds charge an annual maintenance fee that

pays for the cost of operating the fund. This can be as little as 0.4 percent of the amount you have invested or as much as 3.0 percent.

Most experts recommend that small investors choose a large no-load fund that has a low maintenance fee. Many funds offered by Fidelity, Vanguard, or other financial organizations fit this description.

MUTUAL FUNDS INVEST IN DIFFERENT WAYS

Not all mutual funds make the same types of investments. Some are conservative and buy stocks only in large, well-established firms. Others buy stocks in small firms, while some look for stocks in cutting-edge firms creating new technology. In recent years, many mutual funds have invested in foreign stocks or in businesses that specialize in developing energy or new types of pharmaceuticals.

Still other funds do not "pick" stocks but simply establish clearly defined rules for selecting stock—rules that remain constant regardless of market conditions. These so-called *index funds* may invest, for example, in all of the 30 corporations in the Dow Jones Industrial Average or in all of the 500 largest U.S. corporations.

By reading a fund's prospectus, you can find out what investment strategy is followed. A prospectus will be provided free of charge when you request one in writing, by telephone, or online.

Investing in Corporate Bonds

In Chapter 10 you learned that a bond is a promise to repay the holder a fixed sum of money on a designated date of maturity plus make annual interest payments until that date. Federal, state, and local governments, and corporations issue bonds to borrow funds. Nearly half of the money borrowed by corporations is obtained by selling bonds. Investors who purchase **corporate bonds** do not thereby become owners of that firm. They have made a loan that entitles them to be repaid at the specified date and receive interest until that date. Investing in corporate bonds involves less risk than buying stock in that firm because the bonds must be repaid whether or not the business earns a profit. The only reason a bond would not be repaid is if the business fails. Even then, the firm's bondholders must be paid from the firm's remaining assets before preferred or common stockholders receive a cent.

corporate bond
Loan that entitles investor to be repaid at the specified date and receive interest until that date

Most bonds are transferable. This means they can be resold to someone else in the *secondary bond market*. Just like the stock exchanges where "used" shares of stock are traded, previously owned bonds are traded in the secondary bond market.

THE PRICE OF USED BONDS CAN CHANGE

An investor who purchases a corporate bond and holds it until it matures will be paid the same amount originally invested plus interest. However, the value of a "used" bond will change if it is sold on the secondary market before it comes due. Suppose you purchased a corporate bond for $1,000 that promised to pay 6 percent interest ($60) in each



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Investment companies such as Fidelity Investments offer many different types of mutual funds, each one with a different set of potential risks and rewards. What characteristics of a mutual fund would you need to consider before investing in one?

of the next ten years. After four years you decide that you need your money and decide to sell your bond. In the meantime, prevailing interest rates have fallen and a new bond issued by the same firm pays only 5 percent interest ($50). Your "used" bond pays more interest than a new bond so you can expect a higher price when you sell it. You might be able to get $1,050 for your bond. The person who buys your bond will still receive only $1,000 when the bond matures. But he will earn $10 more in interest in each of the next six years than he would if he had purchased a new bond. This is why he is willing to pay more. If prevailing interest rates fall, the value of "used" bonds will increase.

Suppose that instead of falling, interest rates increase. After four years, bonds issued by the same business pay 7 percent interest ($70). In this case no one would want to buy your "used" bond unless you were willing to accept less than its original price. You might be able to sell it for $950. Then the buyer would receive $10 less in each of the next six years than he would from a new bond. However, he would receive $1,000 when the bond matures, giving him $50 more than he paid for the bond. If prevailing interest rates increase, the value of "used" bonds will fall. *Anyone who purchases bonds as an investment should understand that the value of the bond will change inversely with interest rates until the bond matures.*

DIFFERENT BONDS, DIFFERENT RISKS

Although owning corporate bonds is less risky than purchasing stock in the same firms, there still is risk involved in bond ownership. As noted already, there is a risk that interest rates will increase causing the current value of bonds to fall. There also is a risk of non-payment or default. Every year some corporations fail. Bondholders in a failed corporation will probably not receive the full amount they are owed. They might receive nothing at all if the firm is deep in debt.

If you buy a corporate bond issued by a large successful firm, there is little chance of losing your investment. But, if you buy bonds from a firm that is in financial trouble, the interest rate will be higher but you may lose part or all of your investment. Bonds issued by businesses that are in financial trouble are often called *junk bonds*. Junk bonds pay much higher rates of interest to compensate investors for the risk they take when they buy these bonds. In 2006, most quality corporate bonds paid from 6 to 8 percent interest. At the same time, junk bonds paid from 12 to 20 percent per year. If these bonds were paid on schedule, their owners would earn a large return on their investment. Obviously, people who cannot afford to lose the money they invest should avoid junk bonds.

MUTUAL FUNDS THAT BUY CORPORATE BONDS

Many people would like to own corporate bonds but do not have the time or expertise to decide which bonds to buy. Or, they may not have enough funds to diversify their investment. There are many mutual funds that purchase corporate bonds instead of stock. Bond funds work exactly the same way as stock mutual funds. Some buy only government bonds; others purchase bonds from only large, successful firms. Still others specialize in buying bonds issued in other nations. The funds that offer the highest returns usually buy junk bonds. Investors should study each fund before choosing the ones that best fit their financial goals.

✓ CHECKPOINT

What similarities and differences do you see between investing in corporate stock and investing in corporate bonds?

Money Management Assistance

You may feel overwhelmed by the number and complexity of savings and investment choices you have to make. There is a temptation to simply place your savings in a bank account and forget about it. Although understandable, this choice is almost certain to reduce what you earn from your savings and,

over time, to reduce the likelihood of achieving your life goals.

Where to Find Investment Information

A good way to begin learning about investment opportunities is to regularly read financial publications such as *The Wall Street Journal*. This newspaper carries a wide variety of articles about businesses, the economy, and investments. Over a period of time, you should come to better understand what is happening in the economy and to identify investment options you might consider. There are many other financial publications available, including *Money, Kiplinger's Personal Finance Magazine, Fortune*, and *Forbes*. All of these are available for free at larger public libraries. You also may investigate specific firms or funds on the Internet, where a vast amount of information is available.

Where to Find Investment Help

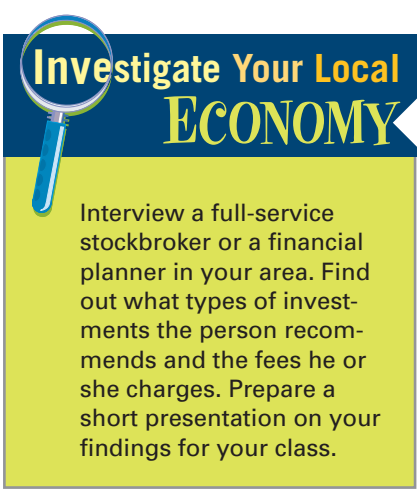
Many people choose to hire experts to help them make investment decisions. One possibility is to talk with a full-service stockbroker. Full-service stockbrokers are trained to explain investment opportunities and to recommend how to allocate funds. Stockbrokers earn income from the fees they charge when transactions are made. Because full-service brokers provide advice for "free," the fees they charge for transactions can be substantial. There also are discount brokers, who help complete transactions without offering much advice. Their fees are lower, but the individual must make investment decisions alone.

Another type of expert you could hire is a **financial planner**. This is a person who gives investment advice for a fee. A financial planner may be self-employed or work for a bank or other financial institution. If you choose to employ a financial planner, you should be sure that this person spends enough time learning about your financial goals and situation. *Planners cannot help you achieve your goals unless they know what you hope to achieve and understand what resources you have to achieve your goals.*

financial planner
Expert who gives investment advice for a fee

Financial planners are in business to earn a living. They get paid in three primary ways. Some charge a flat fee to help you create a financial plan. This fee may vary according to the amount you plan to invest and the time they spend helping you create your plan. Alternatively, some planners charge a fixed percent of the amount that is to be invested. A third method is to charge an initial fee plus an amount for each transaction. You probably should avoid employing a planner who uses this third method. It gives the planner an incentive to make more trades, or "churn" your account. Excessive trading adds to costs and may benefit the planner much more than the investor.

You should be careful when deciding to employ a financial planner. Many planners receive a commission from the mutual funds they get you to buy. Some planners may be more interested in maximizing their commissions than in making the best investment choices for you. It is always a good idea to ask friends or relatives for their recommendations for a financial planner. If others have been satisfied with a planner's advice, you may be satisfied too.



✓ CHECKPOINT

Where can you turn for assistance with managing your investments?

Assessment 21.2

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Key Concepts

1. What are the differences between the two types of corporate stock?
2. What causes the market price of a particular stock to change?
3. Why shouldn't a person invest in only one or two stocks?
4. What would cause the price of a "used" corporate bond to increase on the secondary bond market?
5. What sort of information might you learn by reading *The Wall Street Journal* or similar financial publications?
6. Why should people be careful when they choose a financial planner?

Graphing Exercise

7. There are many ways to judge how the stock market is doing. One of the most popular is to examine the Dow Jones Industrial Average (DJIA). This index averages the stock value of 30 large corporations that represent a cross-section of the U.S. economy. The DJIA does not provide information about specific stocks. However, by looking at this average, investors can get a quick idea of how stocks and the economy are doing in general. Use data in the table to make a bar graph that shows the average annual value of the DJIA over ten years. What would have happened if you had invested your savings in stocks in 1996 or in 2000?

Value of the Dow Jones Industrial Average, 1996–2005

Year	Value of the Dow Jones Industrial Average	Year	Value of the Dow Jones Industrial Average
1996	5,743	2001	10,198
1997	7,441	2002	9,226
1998	8,626	2003	8,994
1999	10,465	2004	10,317
2000	10,734	2005	10,849

Source: *Economic Indicators*, January 2006, p. 31.

Think Critically

8. **Entrepreneurship** Assume that you have saved $500,000. You want to use your savings and to raise another $1 million to start a business that manufactures and sells baseball bats. You could borrow funds from a bank, form a corporation, and sell stock to the public or sell corporate bonds that your corporation would eventually be required to repay. Which of these alternatives would you choose? Explain how you would try to convince the bank or investors to provide you with the funds you need. How much risk would your business hold for investors?

movers & shakers

Meg Whitman *CEO, eBay, Inc.*

Meg Whitman had not planned to become a business executive. Growing up on Long Island, New York, she planned a career in the medical field and entered college with medicine on her mind. However, a summer job selling advertising sparked an interest in business, and she returned to college after summer break as an economics major. Two years after earning her economics degree from Princeton University, she graduated from Harvard Business School with an MBA. The next 20 years included stints at some of the most prestigious companies in the world: Procter & Gamble, Walt Disney Company, Stride Rite Corporation, Florists Transworld Delivery (FTD), and Hasbro, Inc.

In 1998, while overseeing global marketing for Mr. Potato Head and Playskool brands at Hasbro, Whitman received an offer that would change her life. Would she be interested in running a tiny online auction company? She eventually said "yes" and has been CEO of eBay, Inc, ever since. When she began her new position, eBay was a haven for Beanie Baby buyers and collectors. Today eBay is an online powerhouse with 2005 sales of $4.6 billion, a 39.2 percent increase over the previous year.



SUPPLIED PHOTO

Whitman considers eBay "a small economy," meaning it's a place where more than 150 million registered users meet each day to do business. These users, not eBay, control pricing of items for sale on the web site. "If prices go up in a category, then sellers automatically bring more product to the marketplace. If prices are headed down, then sellers automatically reduce the amount of product they have because they're only willing to sell products at a certain price."

Although she's CEO, in some respects Whitman feels totally powerless over her company. "It's not something we can manage," she explains. "Our users are on to the next idea, the next hot thing, faster than we could ever be as a company. It's the millions of entrepreneurs who maximize their own business on eBay, which in turn maximizes the economy."

Whitman's passion for her customers drives the company's success. Some make their living on eBay. She refers to eBay customers as her partners and welcomes their feedback, which comes in the form of up to 500 e-mails a day. This feedback drives her decision making. For example, when a group of craftswomen in Guatemala wanted to trade their products on eBay, Whitman traveled to the country to meet with them. She also arranged to help install the technology needed in their village to make trading possible. This gesture demonstrates Whitman's belief in the company's stated mission "to provide a global trading platform where practically anyone can trade practically anything." She has further spread this mission by establishing global sites in 27 countries including Korea, Argentina, Singapore, and Taiwan.

SOURCE READING

Meg Whitman indicates eBay's stated mission is "to provide a global trading platform where practically anyone can trade practically anything." How does Whitman's passion for the customer help carry out this mission?

ENTREPRENEURS IN ACTION

In what ways are Meg Whitman's business practices and philosophy similar to those of other entrepreneurs? In what ways is eBay different from a more traditional firm that produces and sells goods and services?

Sources: www.ebay.com; http://yahoo.businessweek.com:/print/bwdaily/dnflash/aug2003/nf20030818_1844_db049.htm?pi

21.3 Insurance

Objectives

- Understand the primary types of insurance you can buy to protect yourself against risk
- Determine the types and amounts of insurance you will need

Overview

Most people try to avoid unpleasant surprises. For example, you wouldn't want to find that your property has been lost, stolen, or damaged. Being sued because a delivery person falls over a shovel left on your front steps also is something you would rather avoid. Perhaps most frightening is the prospect of becoming ill or being injured so you are unable to work and then face enormous medical bills. Unfortunately, there is no way to avoid all risk. Fortunately, there is something you can do to address most risks. You can buy insurance to help protect you against the losses from events you hope will never occur.

Key Terms

insurance

policy

property insurance

deductible

liability insurance

personal insurance

In the News

Identity Theft Insurance

You now may purchase insurance that provides limited protection from losses resulting from identity theft. Financial businesses that include American Express, JPMorgan Chase, and Citibank, to name only a few, offer identity theft insurance. Premiums and coverage vary widely. One nationally advertised insurer offers "Premium Protection," for *only* $420 a year. Other policies cost $1,000 or more. At the beginning of 2006, more than one million policies had been sold. Recent news reports have questioned the value of such insurance. Most policies offer two types of protection. First, they reimburse victims for out-of-pocket expenses and lost income up to a limit that is generally from $2,000 to $10,000. Most of these policies have a deductible of $500 to $1,000 that the victim must pay before the insurance company pays anything. Second, some insurers monitor policyholders' credit records and report unusual charges. Only the most expensive policies help correct credit records when identity theft does occur. Most victims must try to correct their records and settle fraudulent charges made by credit thieves. These insurance policies do not relieve victims of the grief and aggravation they suffer in correcting their credit records.

THINK ABOUT IT

Do you think buying insurance protection for identity theft is a rational consumer choice? Would you choose to purchase this type of protection or recommend it to other members of your family? Why do you think so many people have purchased this type of protection when it may have such limited value?

Source: "The ID Theft Protection Racket," CNNMoney.com, August 22, 2005.

Buy Insurance to Protect Yourself

Life is full of risks. There are risks that your investments will go sour and you will lose part of your savings. A storm might tear the roof off your house or a tree might fall on your car. You might accidentally break your neighbor's window, or a delivery person might fall over toys left on your sidewalk. In the future you might be injured in an accident or become ill and unable to work. Whether you will or will not suffer a loss because of any of these events cannot be predicted. You can, however, buy **insurance** to protect you from losses that are beyond your ability to withstand.

People who purchase insurance sign a legal contract, or **policy**. The policy requires them to pay a premium in exchange for an insurance company's promise to pay claims for any insured loss up to a maximum amount covered by the policy. The insurance company receives premiums from all policyholders and uses these funds to pay benefits to the few who actually suffer losses. In this way the policyholders share their risk. They all share the cost of large losses by paying the smaller cost of their premiums.

Premiums and Past Events

Insurance companies need two types of information to set premiums. They need to know the probability of a loss being suffered by an insured policyholder, and they need to know the probable cost of a loss that might take place. Suppose the Safety Insurance Company (SIC) insures one million drivers. The company knows from experience that about one out of every 1,000 drivers will cause an accident each year by driving into the back of another car. It also knows that the cost of such an accident in the past has averaged $6,000. So, by charging each policyholder $6, SIC can cover policyholders for this type of loss. The firm would collect $6 million from its insured drivers and pay the $6 million to the 1,000 drivers who caused rear-end collisions. Premiums also would add in all the other risks the policy covers, the costs of administration, plus a competitive level of profit. SIC cannot tell which particular policyholders will suffer a loss, but it can be reasonably sure how many will suffer losses and how much they will cost.

Insurance companies also receive income when they invest funds they have accumulated in previous years. This revenue makes up for years when insured losses and operating expenses exceed the amount received in premiums.

Consider Figure 21.3, which shows the insurance industry's income and expenses from 1999 through 2003. If insurance companies had not earned income from investments, what might they have been forced to do with the premiums they charge?

insurance
Protection you purchase against losses beyond your ability to withstand

policy
Legal contract between an insured person and an insurance company

Insurance Industry Income and Expenditures, 1999–2003, Values in billions of dollars

Figure 21.3

	1999	2000	2001	2002	2003
Premiums	$296.6	$304.3	$327.8	$372.7	$407.6
Investment Income	$ 40.3	$ 42.0	$ 38.7	$ 39.8	$ 39.8
Losses and Expenses	$302.6	$321.3	$361.8	$377.4	$390.9
Operating Earnings	$ 34.3	$ 25.0	$ 4.7	$ 35.1	$ 56.5

Source: *Statistical Abstract of the United States*, 2006, p. 782.

Types of Insurance

There are three types of insurance: property, liability, and personal. No insurance plan is complete without some of each.

property insurance
Protects policyholders from losses to their property

deductible
An amount an insured person must pay before the insurance company pays anything

liability insurance
Protects against losses from injuries you cause to another person or damage you cause to another's property

PROPERTY INSURANCE

Property insurance protects policyholders against losses to their property. When you buy automobile insurance, for example, your collision coverage will pay for any damage to your car that results from an accident. Your homeowner's policy will protect your home and personal property from theft or fire.

Almost every property insurance policy has a deductible and limits the loss that is covered. A **deductible** is an amount an insured person must pay before the insurance company pays anything. For example, many automobile collision policies have a $500 deductible. If your car suffers an insured loss of $2,500, you will pay the first $500 of repair cost and the insurance company will pay the remaining $2,000. The dollar limit for property insurance is stated in the policy or determined by the value of the insured property. For example, if the policy sets a windstorm damage limit of $4,500, this is the most that your insurance will pay.

LIABILITY INSURANCE

Liability insurance covers losses from injuries you cause to another person or damage you cause to someone else's property. Suppose, while backing out of your driveway, you are distracted on your cell phone and fail to see a neighbor driving past. You back into him, damage his car, and break his leg. The liability protection of your automobile insurance policy would pay for his medical care, lost wages, and the cost of repairing his car.

Liability insurance included in your homeowner's policy protects you from losses suffered by others when they are

ETHICS IN ACTION

Auto Insurance Fraud Hits Home

Auto insurance fraud takes a significant bite out of people's pockets. One of the most recent studies estimates that the amount lost to insurance fraud is approximately $250 per family per year. Consequently, many states are cracking down on those who attempt to bilk the insurance system with improper personal injury and property damage claims. Many of the prosecutions as a result of the crackdown occur in the personal injury area, where most states require drivers to carry a minimum of $10,000 of protection. Most of these fraudulent cases involve unscrupulous lawyers, doctors, and clinic owners who illegally bill for exaggerated amounts or for medical services never provided. In states where appropriate statutes are in place and fraud is being actively pursued by law enforcement, auto insurance rates have begun to fall. New legislative action against faked or intentionally staged auto accidents is pending in many jurisdictions. Other legislation specifically makes a felony of a long-standing business practice of some auto body shops. These shops inflate an auto repair estimate with the intent of covering the individual's insurance deductible. The deductible is then waived by the body shop in an attempt to get more business. The result shifts the entire responsibility for paying for the damage to the insurance company that agrees to the estimate.

THINK CRITICALLY

Is the deductible waiver practice of some auto body shops ethical? Why or why not? Is it necessary for the government to make the deductible waiver practice illegal? Why or why not?

Sources: "Insurance Fraud Legislation Will Help Fight Scams," *U.S. Fed News*, May 6, 2006; "New Jersey's Fraud Fight Fruitful in 2005," *BestWire,* March 3, 2006.

on your property. For example, if a delivery person was injured when she tripped over tools you left on your sidewalk, the cost of her medical care would be paid by your homeowner's policy. The limit on the amount paid by a liability policy is determined by the amount of coverage purchased or the cost of the loss that is suffered, whichever is less. If your liability coverage is limited to $50,000 and the loss you cause costs $60,000, you will be responsible for $10,000 of the loss.

PERSONAL INSURANCE

Personal insurance protects you and your family from financial loss if a family member is injured, becomes ill, or dies unexpectedly. *Medical insurance*, for example, helps pay the cost of your medical care if you are injured or become ill. Typical medical insurance policies have a deductible that must be paid by the insured person before the insurance company pays any part of the cost of treatment. Your policy might require you to pay the first $500 of medical expenses in any year. After that amount is paid, the insurance company will pay all or a share of the remaining cost. The typical share paid by an insurance company is 80 percent. There usually is a limit to the total amount an insurance company will pay over an insured person's life. This amount often is $1 or $2 million. A wide variety of medical insurance policies pay different amounts under different circumstances. However, they are all designed to protect insured people from medical costs that are greater than they would be able to pay on their own.

Life insurance is another type of personal insurance. It protects an insured person's family from financial loss if an insured person dies. Life insurance is particularly important for couples who have young children. If one parent dies, the other may need to pay the cost of child care at the same time household income falls because of the death. Even people who do not work outside their home should be insured. If a stay-at-home parent dies, the spouse would have to perform extra tasks or hire others to do them. This can be expensive. In 2004, on average, a full-time, live-in housekeeper earned more than $20,000 a year plus the cost of room and board.

✓ CHECKPOINT

What types of property, liability, and personal insurance are available for your household?

Your Insurance Needs

No amount or combination of insurance protection is right for everyone. Different people have different needs and financial circumstances. This means they also have different insurance needs. When you evaluate your insurance needs, you should keep these ideas in mind.

- It is impossible to eliminate all risk from your life.
- You should try to limit your risks to those you would be able to deal with on your own.
- You should consider buying insurance to cover risks you could not deal with on your own.

Before you decide what insurance protection to purchase, you should first make a list of the losses you might reasonably expect to suffer given your personal situation. If you own a car, for example, you are required by state law to purchase basic liability insurance. You also may decide to buy collision insurance. You may purchase comprehensive insurance as well to protect your car from damage that is not the result of a traffic accident. For example, if your car is destroyed by a fire, comprehensive insurance will help pay for a replacement.

personal insurance
Protects against financial loss from injury, illness, or unexpected death of the insured person

NET Bookmark

Everyone who owns or drives a car needs auto insurance, but not everyone knows what they should about the coverage included in an auto policy. Log on to thomsonedu.com/school/econxtra and read the Insurance Information Institute's web page entitled "What is covered by a basic auto policy." Study the descriptions of each of the six coverages included in an auto policy. Be prepared to explain each in class.

thomsonedu.com/school/econxtra

People who own a home need to buy homeowner's insurance to protect their property. Homeowner's policies usually include liability insurance. If someone is injured on your property, your homeowner's policy will cover the loss. Renter's insurance is important for people who lease an apartment. It pays for losses renters suffer when their possessions are lost, damaged, or stolen. It also provides basic liability protection.

Rank Your Insurance Needs

Once you have a clear idea of the types of losses you need to insurance against, you should rank them according to their importance and probability of happening. *You should always be sure to purchase liability protection.* In general, automobile and homeowner's policies provide sufficient liability coverage for most people. An additional *umbrella policy* may be purchased for a few hundred dollars per year that will increase liability protection to $1 million or $2 million in losses.

Everyone should have at least some medical insurance. Today most employers who provide medical insurance expect employees to pay part of the cost of coverage. However, even if your employer covers a portion of medical insurance costs, that policy likely will cost you much less than coverage you could purchase on your own.

People who are not insured through an employer usually pay dearly for medical insurance. In 2006 a traditional family medical policy cost between $10,000 and $16,000 per year, depending on location and the amount of coverage. Coverage for a single person cost $6,000 to $9,000. Less protection cost less. Some policies have a deductible of as much as $2,500 or more. After that deductible is paid, insurance picks up a share, possibly 80 percent, until the total cost hits some large amount, say $10,000. Then the insurance pays all of the additional medical costs that year. This plan is less costly for those who remain healthy and more costly for anyone who becomes seriously ill or seriously injured. Still, such a policy protects people from enormous medical costs they couldn't possibly pay on their own. This is only one of hundreds of variations of medical coverage that you can investigate before buying a policy.

Many people ignore their need for life insurance. No one likes to think about it, but death is unavoidable. *People should protect their families from the financial loss resulting from an unexpected death.*

Life insurance is sold in two basic forms, whole and term. *Term life insurance* provides a death benefit only if an insured person dies within a specific period of time. These policies, particularly for young people, are relatively inexpensive. In 2006 a 25-year-old nonsmoking male could purchase $50,000 in term insurance for ten years for less than $230 per year. *Whole life insurance* policies are much more expensive because they not only pay when an insured person dies, but also provide a way of saving for the future. When a whole-life policyholder reaches a specific age, the policy will have a value that can be cashed and spent if the policy is surrendered before his or her death occurs. Even without surrendering the policy, you can borrow against its value.

The Decision to Purchase Insurance

A decision to purchase insurance is always a trade-off. Buying insurance usually will not increase your ability to consume either now or in the future. When you buy insurance, you trade some of your current income for the security it offers against the possibility of unforeseen loss that may, or may not, occur in the future. No one should spend so much on insurance that he or she is unable to maintain a reasonable standard of living. Only you are qualified to determine the amount and types of insurance that are right for you. Just be sure you gather and evaluate enough information to make your decision a rational one.

✓ CHECKPOINT

What types and amounts of insurance do you think you will need in the future?

Assessment 21.3

Key Concepts

1. Explain how insurance policyholders share their risk?
2. What is the difference between property insurance and liability insurance?
3. What are the two primary types of personal insurance?
4. Why do parents with young children need to purchase at least some life insurance?
5. In what way is buying insurance protection a trade-off?

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Graphing Exercise

6. Although most financial experts agree that buying life insurance is a wise choice, most Americans do without this type of protection. As a matter of fact, the number of policies in force has fallen in some recent years. Use data in the table to draw a line graph that shows the number of new life insurance policies purchased by Americans from 1995 through 2003. What does your graph show about life insurance ownership? What might have caused the number of new policies purchased in the late 1990s to fall?

Number of Personal Life Insurance Policies Purchased, 1990–2003
Values in Thousands

Year	Number of Personal Life Insurance Policies Purchased	Year	Number of Personal Life Insurance Policies Purchased
1990	14,199	1998	11,559
1991	13,471	1999	11,673
1992	13,350	2000	13,345
1994	13,574	2001	14,049
1995	12,595	2002	14,692
1996	12,022	2003	13,510
1997	11,734		

Source: *Statistical Abstract of the United States,* 2006, p. 1210, and 1996, p. 553.

Think Critically

7. **Demographics** Drivers who are most likely to be involved in automobile accidents are either relatively young or quite old. And, although drivers are involved in more accidents as they grow old, these accidents usually result in fewer injuries and less property damage than accidents involving young drivers. What reasons can you think of that could explain these facts? As the population of the United States becomes older, what is likely to happen to the number of automobile accidents? What should this do to automobile insurance premiums over time?

21 Chapter Assessment

Summary

21.1 Saving

a *Saving* is the act of not spending current income. The most important reason to save is to achieve financial security.

b People who save need to choose a way to store their savings. Keeping savings at home exposes them to a risk of loss and allows their value to fall as prices rise. Most people keep their savings in one or more types of bank accounts.

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c Banks offer a variety of accounts. Funds may be deposited or withdrawn at any time from savings accounts that pay a fixed rate of interest. Funds also may be withdrawn a limited number of times per month from *money market accounts* that pay interest at rates that change with interest rates in the economy. Time deposits, or *certificates of deposit*, pay higher rates because the depositor agrees to leave funds on deposit for an extended period of time.

d Checking accounts give depositors the ability to write checks or use a debit card to pay bills, but most accounts do not pay interest. Checking accounts usually involve two types of fees: a monthly maintenance fee and a service fee for each check written. Banks provide depositors with monthly statements that report all transactions.

e *Compound interest* is paid on the amount deposited plus interest already earned on that deposit. The more often interest is compounded, the greater the return will be.

f All banks are required to calculate the interest they pay on deposits in the same way. This is called the *annual percentage yield (APY)*.

21.2 Investing

a *Investing* is using savings to earn a return. People may invest their savings in a variety of ways. These include depositing them in a bank account that earns interest, buying shares of *corporate stock*, or buying *corporate bonds*.

b People who invest in corporate stock may earn a *return* by receiving dividends or benefiting from a capital gain. Owners of common stock have one vote per share when important decisions are made for the corporation. They may receive a large dividend if the firm is successful or none if it loses money. Owners of preferred stock receive a fixed dividend. They get no vote in corporate matters.

c Shares of stock are traded on formal exchanges such as the New York Stock Exchange or electronically on the NASDAQ. Investors should *diversify* their investments to avoid the risk of suffering a large loss if the share price of a particular corporation's stock falls.

d Many people diversify their investments by purchasing shares in a *mutual fund*. Some mutual funds charge a load when their shares are bought or sold. No-load funds do not. All funds charge a maintenance fee to cover their costs of operation.

e Corporations often sell bonds to raise funds. A *corporate bond* is a written promise to repay an amount borrowed when the bond matures and to pay interest at a specific rate until then. Once issued, corporate bonds can be bought or sold on a secondary bond market. The value of a "used" corporate bond varies inversely with prevailing interest rates. If rates rise, "used" bonds will be worth less. If rates fall, they will be worth more.

f There are many sources of information about investments. These include *The Wall Street Journal* and other financial publications, sources on the Internet, or information provided by businesses and stockbrokers. *Financial planners* help many people make investment choices for a fee. You should always investigate a financial planner before you hire one.

21.3 Insurance

a Many people buy *insurance* protection that will directly benefit those who suffer insured losses. The insurance *policy* is a legal contract

that requires people to pay a premium in exchange for the company's promise to pay claims for losses up to a maximum amount. Policyholders share their risk and the costs of losses that occur.

b Insurers set premiums by projecting the probability of a loss and the expected cost of that loss. If the insurer's projections are accurate, premiums will cover costs and generate a profit.

c There are three basic types of insurance. *Property insurance* protects people from property damage. *Liability insurance* protects them from damage or injuries they cause to others. *Personal insurance* pays for medical care or an untimely death.

d Buying insurance is a trade-off between current consumption and future security.The amount and types of insurance that people should purchase varies, depending on their personal and financial situations.

Review Economic Terms

Choose the term that best fits the definition. On a separate sheet of paper, write the letter of the answer. Some terms will not be used.

____ **1.** Using savings in a way that earns income to create a return

____ **2.** A financial organization that accepts funds from many people and invests them in a variety of stocks

____ **3.** A formula banks must use to calculate interest they pay on deposits

____ **4.** Interest paid on an amount deposited and on interest that has previously been earned

____ **5.** Income earned from funds that are invested

____ **6.** Investing in a wide variety of firms

____ **7.** Protection against losses you cause by injuring other people or damaging another person's property

____ **8.** Protection against financial loss if an insured person is injured, becomes ill, or dies unexpectedly

____ **9.** The amount an insured person must pay before an insurance company pays any part of a loss

____ **10.** The legal contract between an insured person and an insurance company

a. annual percentage yield (APY)
b. certificate of deposit (CD)
c. compound interest
d. corporate bond
e. corporate stock
f. deductible
g. diversification
h. financial planner
i. insurance
j. investing
k. liability insurance
l. money market account
m. mutual fund
n. personal insurance
o. policy
p. property insurance
q. return
r. saving

Review Economic Concepts

11. **True or False** When you save, you trade the satisfaction of buying something now for the satisfaction you may receive from buying something else in the future.
12. It generally is easier to follow a savings plan when
    a. you have set clear goals for your financial future.
    b. your monthly income is less than your monthly expenses.
    c. your bank increases the interest rate it pays on customer's deposits.
    d. your income has recently changed.
13. Income earned from funds that are not spent is called a(n) ____?____.
14. Which of the following accounts pays interest that changes daily if necessary to reflect changes in the prevailing interest rate in the economy?
    a. savings accounts
    b. money market accounts
    c. checking accounts
    d. certificates of deposit
15. **True or False** In general, the greater the risk you take when you make an investment, the smaller the amount you will earn from it.
16. Which of the following refers to the amount banks charge each month to keep a checking account open?
    a. service fee
    b. carrying fee
    c. support fee
    d. maintenance fee
17. You should always _____?_____ your accounts by comparing the records you have of the transactions with those printed on the monthly statement you receive from the bank.
18. **True or False** A corporate bond represents partial ownership of a corporation.
19. Investing in a wide variety of firms to reduce the overall risk of owning stock is called _____?_____.
20. Which of the following refers to shares of stock in large, successful, established corporations?
    a. growth stock
    b. blue chip stock
    c. venture stock
    d. guaranteed stock
21. Which of the following people should invest in stocks through a mutual fund?
    a. Jose, who enjoys following the stock market and choosing stocks he likes
    b. Keisha, who is a professional full-service stockbroker
    c. Harold, who has a little money to invest
    d. Debbie, who has no money to invest
22. **True or False** A no-load mutual fund is less costly to invest in than a load fund.
23. **True or False** All financial planners must pass a qualifying exam and be licensed by the federal government.
24. **True or False** To set premiums, insurance companies must project the probability of a loss being suffered as well as the probable cost of that loss, should it occur.
25. What type of insurance protects you from losses when you injure other people or damage other people's property?
    a. property insurance
    b. liability insurance
    c. personal insurance
    d. universal insurance
26. What type of insurance protects things you own from loss?
    a. property insurance
    b. liability insurance
    c. personal insurance
    d. universal insurance
27. **True or False** An umbrella policy protects homeowners from floods.
28. A(n) _____?_____ insurance policy provides protection for damage to your home and protection if you cause injury to others.

29. What type of insurance is life insurance?
    a. property insurance
    b. liability insurance
    c. personal insurance
    d. universal insurance

30. **True or False** All people need to buy insurance, even if the premiums drastically cut their current standard of living.

31. What does term life insurance provide?
    a. a death benefit as well as a method to save and invest money
    b. only a way to save and invest money
    c. only a death benefit
    d. an amount of value that can be cashed in when a person reaches a certain age

Apply Economic Concepts

32. **Should You Withdraw Funds Early?** Last year you deposited $1,000 in a five-year CD that paid an APY of 4.2 percent. One year later, interest rates have risen and new four-year CDs pay 6.5 percent. If you withdraw your deposit early, you will be charged a penalty equal to all the interest you earned in the past year. But then you could open a new CD and earn the higher rate for the next four years. Calculate which choice would result in the greatest return for your savings over the five years. Explain your answer.

33. **Choose a Medical Insurance Policy** Suppose ten years in the future you are married and have two young children. You are a successful computer consultant and earn a good income. Your spouse stays home to care for the children. Because you are self-employed, you must purchase your own medical insurance. You have narrowed your choice down to the two policies described below. Evaluate each policy and choose the one that you believe would be best for your family. Explain your choice.

Policy A

This is a traditional medical insurance policy that allows you to choose your own doctor, hospital, or other medical provider. It has a $200 deductible for each member of your family. It does not pay for regular physicals. It does pay for prescription medicines, but you must pay the first $10 for each prescription you have filled. The maximum it will pay for any insured person is $2 million over that person's life span. This policy would cost you $18,000 per year for the family's coverage.

Policy B

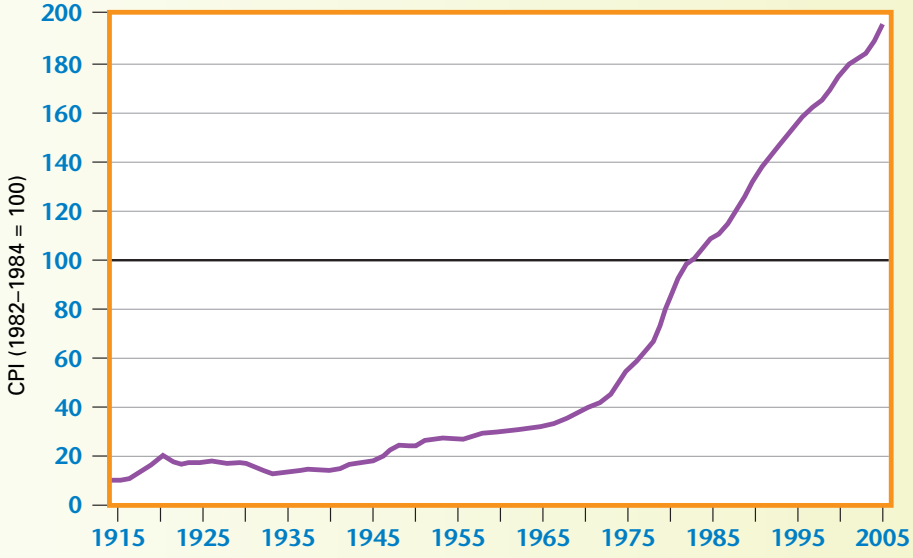
This is a health maintenance organization (HMO) policy that requires you to choose doctors, hospitals, and other medical providers that belong to its system. If you want to see a doctor who is not a member of the system, you must pay for the care yourself. When you receive treatment for an injury or illness, you must pay the first $100 for each insured person each year. After that, the insurance will pay 100 percent of the cost. This policy does cover the cost of regular physicals and pays for prescription drugs after you pay the first $20 for each prescription you have filled. The maximum it will pay for any insured person is $1 million over that person's life span. This policy would cost you $10,500 per year for the family's coverage.



34. For many Americans, the goal of owning their own home is a major motivator for saving money. Access **EconData Online** at thomsonedu.com/school/econxta. Click on "Housing Starts" under "Hot Data" and read the article. Then click on "Updates" and read about the concept of the "ownership society." Write a paragraph explaining this concept in your own words. Also explain why home ownership is important to the U.S. economy.

Economic Indicators

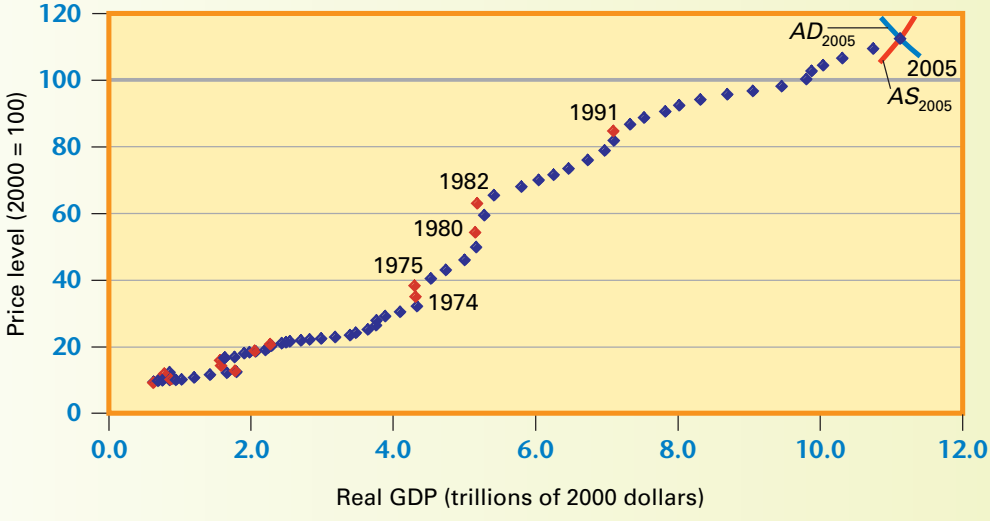
Consumer Price Index Since 1913



Despite fluctuations, the price level, as measured by the consumer price index, was lower in 1940 than in 1920. Since 1940, the price level has risen almost every year.

Source: U.S. Bureau of Labor Statistics ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt.

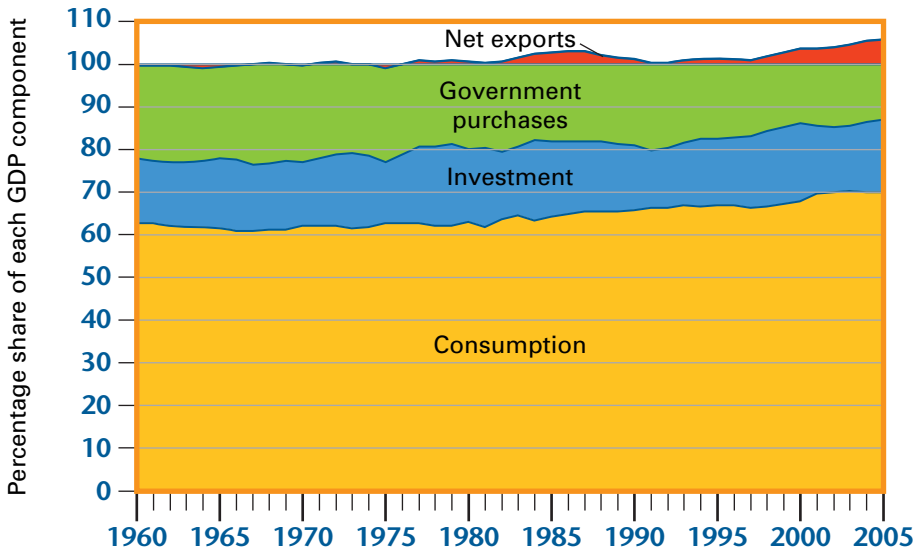
U.S. Real GDP and Price Level Since 1929



Both real GDP and the price level increased since 1929. Blue points indicate years of growing real GDP, and red points are years of declining real GDP. Real GDP in 2005 was nearly 13 times greater than it was in 1929. The price level was more than 9 times greater.

Source: Based on annual estimates from the U.S. Department of Commerce.

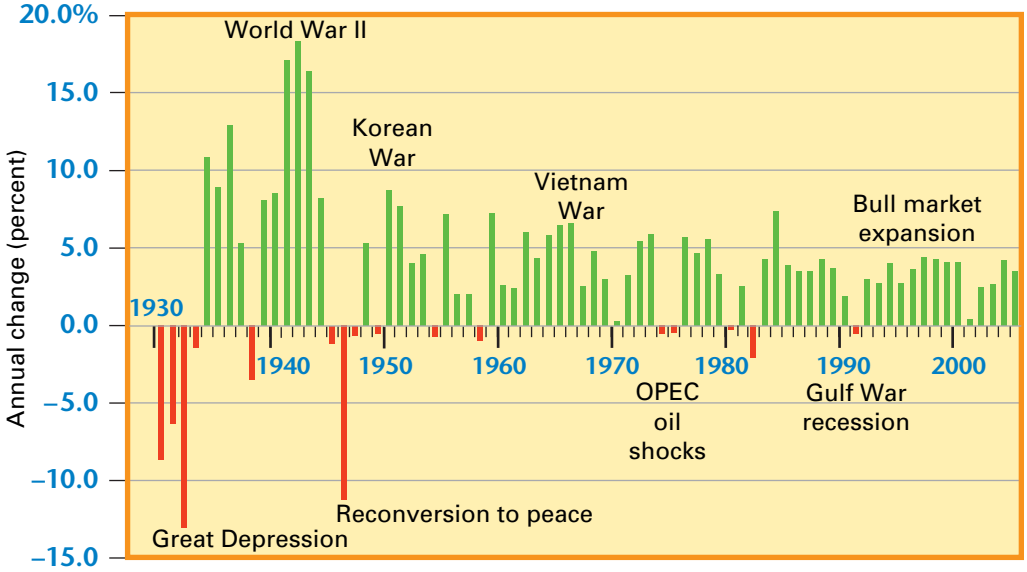
U.S. Spending Components as Percentages of GDP Since 1960



Consumption's share of total U.S. spending increased slightly from 1960 to 2005. During the most recent decade, consumption averaged 69 percent of the total.

Source: Computed from annual estimates from the U.S. Department of Commerce.

Annual Percentage Change in U.S. Real GDP Since 1929

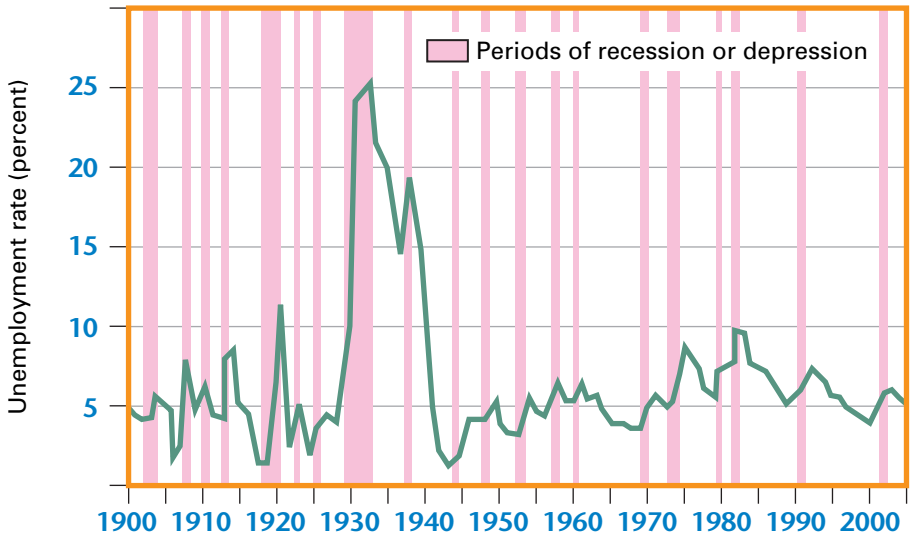


Since the end of World War II in 1945, the economy has gone through 10 business cycles. Expansions averaged just under five years. Recessions averaged just under one year. Note: In this chart, declines are shown in red and increases, in green.

Source: Based on annual estimates from the U.S. Department of Commerce.

Labor and Employment Data

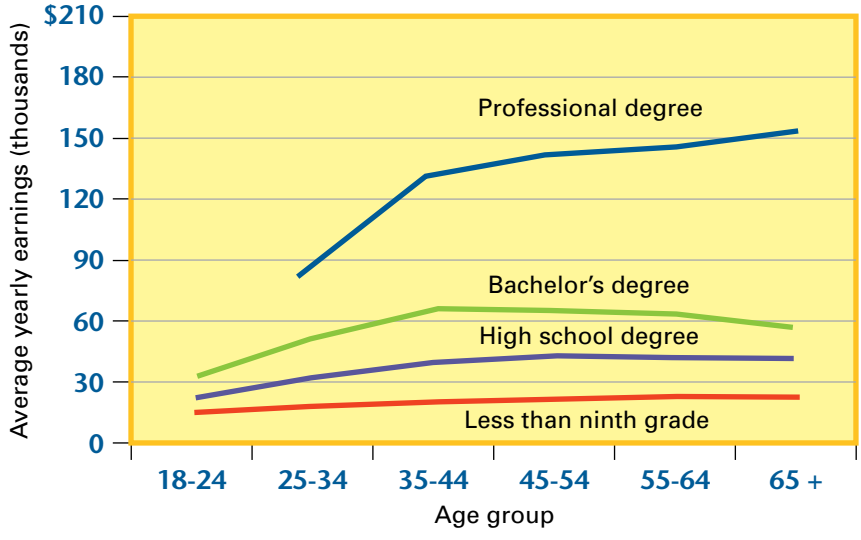
The U.S. Unemployment Rate Since 1900



Since 1900, the unemployment rate has fluctuated widely, rising during recessions and falling during expansions. During the Great Depression of the 1930s, the rate rose as high as 25.2 percent.

Sources: U.S. Census Bureau, *Historical Statistics of the United States: Colonial Times to 1970* (Washington, D.C.: U.S. Government Printing Office, 1975); *Economic Report of the President,* February 2006; and U.S. Bureau of Labor Statistics.

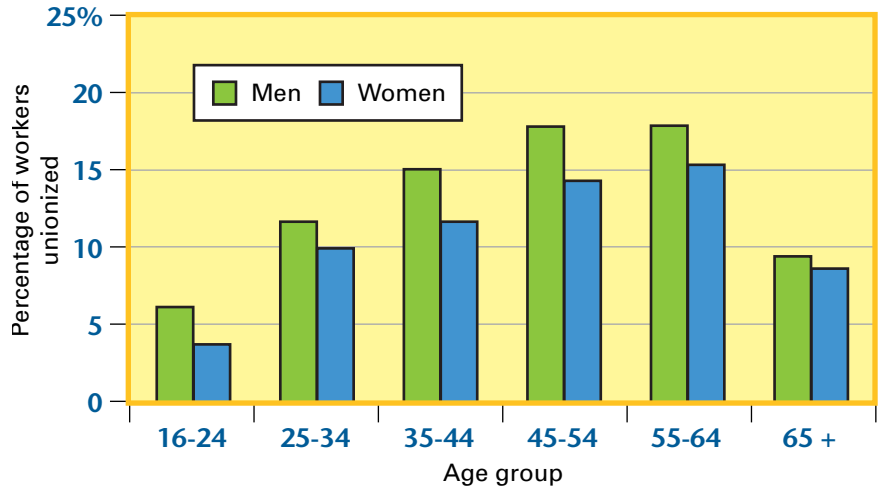
Education Pays More for Every Age Group



At every age, those with more education earn more. Earnings also increase as workers gain more job experience and become more productive. The rewards from years of experience are greater for those with more education.

Source: U.S. Census Bureau, *Current Population Survey,* 2005 Annual Social and Economic Supplement. Figures are average earnings for all full-time, year-round workers in 2004.

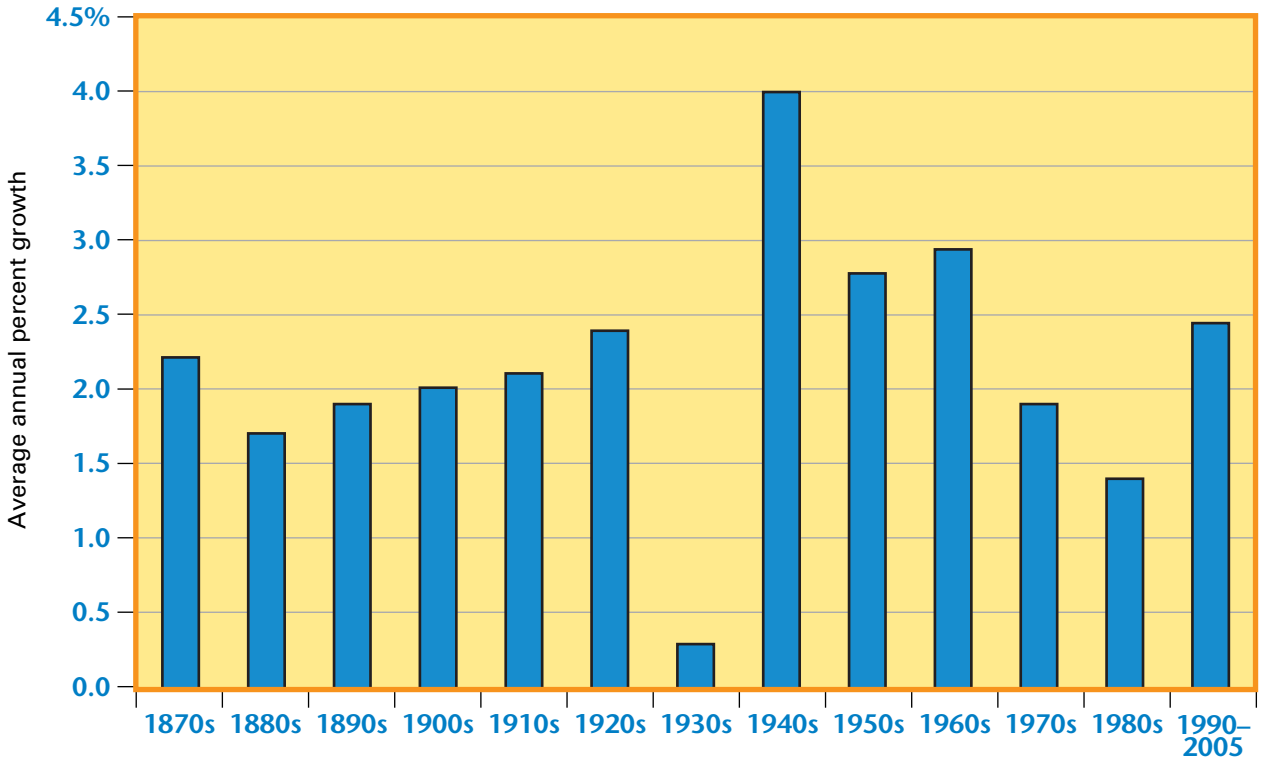
U.S. Union Membership for Men and Women by Age



Men in the United States have higher rates of union membership than women, due to the nature of the work each group typically performs.

Source: U.S. Bureau of Labor Statistics. Percentages are for 2005.

Long-Term Trend in U.S. Labor Productivity Growth: Annual Average by Decade

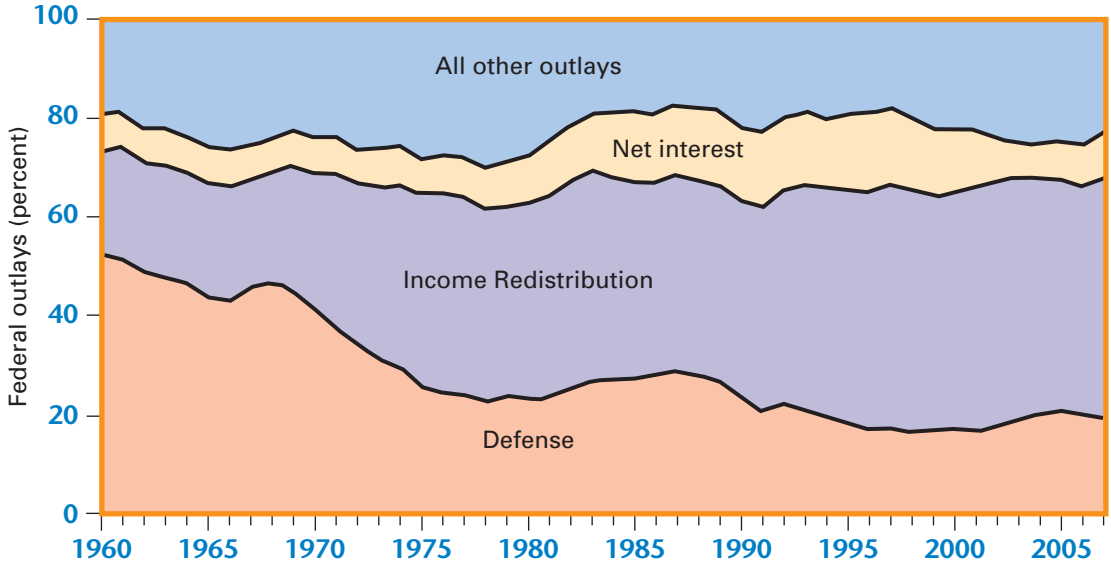


For the entire period since 1870, productivity growth has averaged 2.1 percent per year.

Sources: Angus Maddison, *Phases of Capitalist Development* (New York: Oxford University Press, 1982) and U.S. Bureau of Labor Statistics.

Government Data

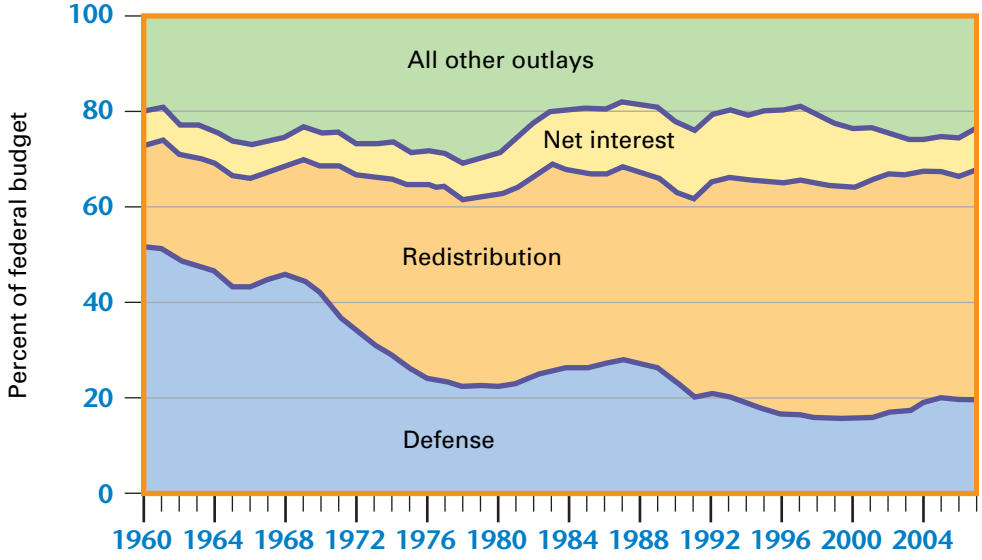
Income Redistribution as a Percentage of All Federal Outlays: 1960-2007



Since 1960, spending on income redistribution has increased and spending on defense has decreased as a share of federal outlays.

Source: Computed based on figures from the *Economic Report of the President,* February 2006, Table B-80. Access the most current report through thomsonedu.com/school/econxtra.

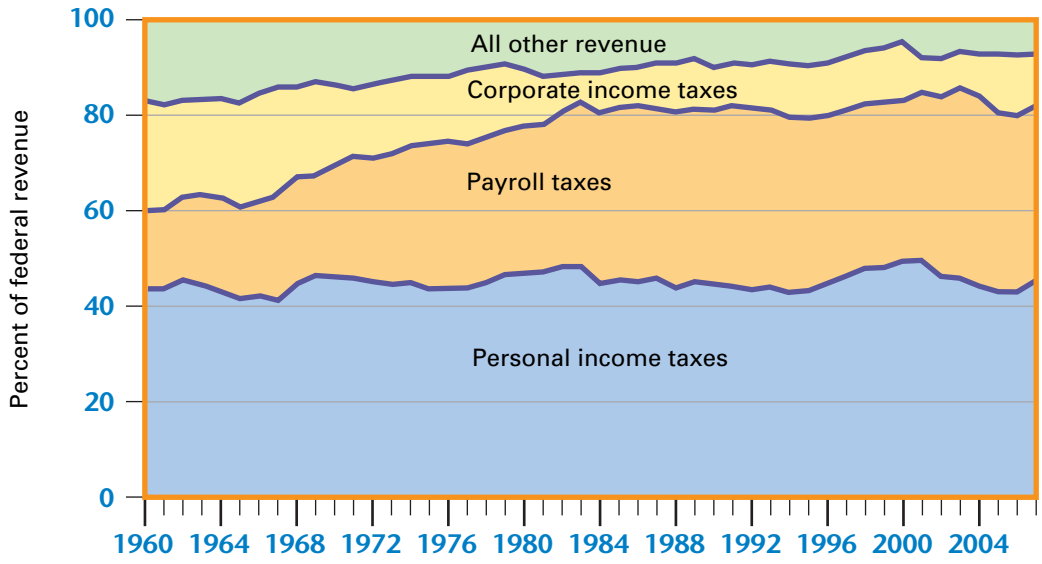
Composition of Federal Spending Since 1960



As a share of the federal budget, defense spending has declined and redistribution has increased since 1960.

Source: *Economic Report of the President,* February 2006, Table B-81. Figures for 2006 and 2007 are projections.

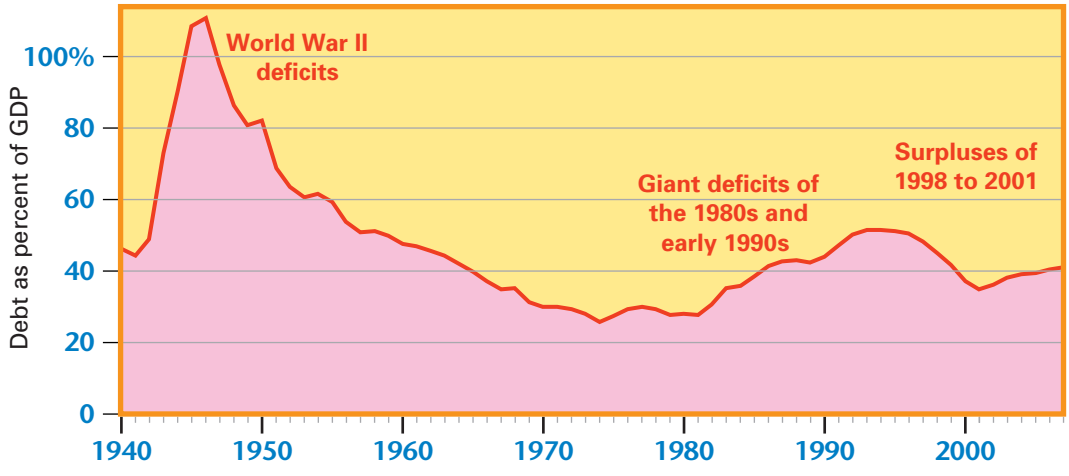
Composition of Federal Revenue Since 1960



Payroll taxes have grown as a share of federal revenue since 1960. Personal income taxes have changed little as a share of the total.

Source: Based on fiscal year revenue figures from the *Economic Report of the President*, February 2006. Figures for 2006 and 2007 are projections.

Federal Debt Held by the Public as Percent of GDP, 1940 to 2007



The federal debt held by the public relative to GDP dropped by nearly two-thirds between 1946 and 2007.

Source: Fiscal year figures from *Economic Report of the President,* February 2006, Table 79. Figures for 2006 and 2007 are projections.

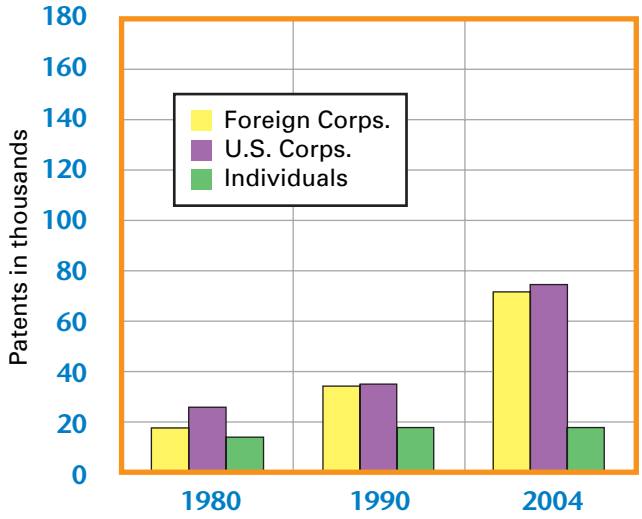
Ups and Downs in the Federal Funds Rate Since 1996



To understand the fluctuations of the federal funds rate, consider what was going on in the economy during the periods shown here.

Source: Based on monthly averages from the Federal Reserve Bank.

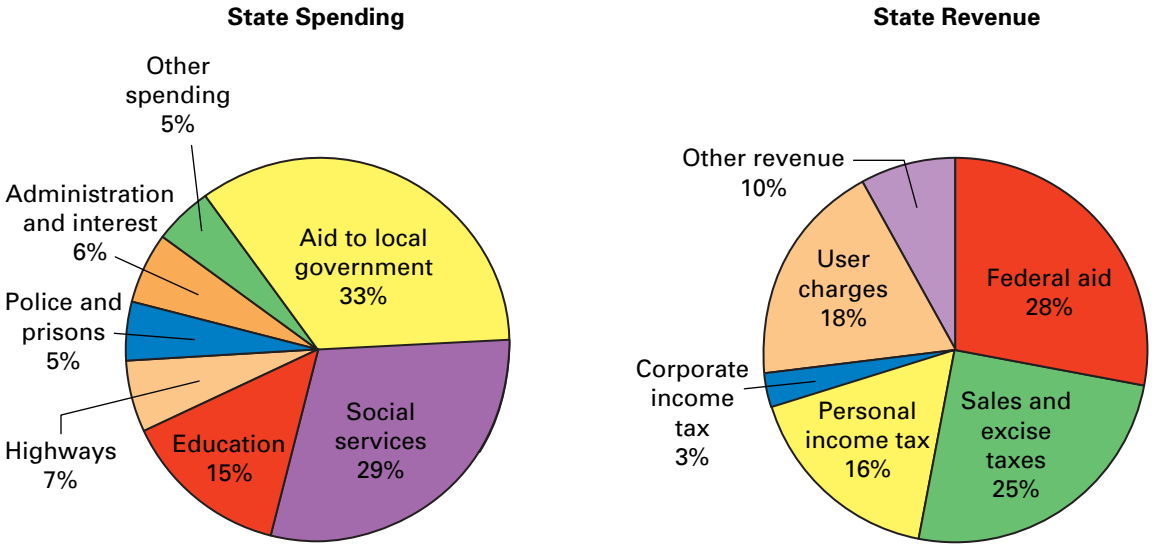
Source of U.S. Patents Awarded for Inventions by Year



The number of patents grew from 61,800 in 1980 to 163,500 in 2004. In 1980, 22 percent of all patents were awarded to individuals. By 2004, only 11 percent went to individuals.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Table 754.

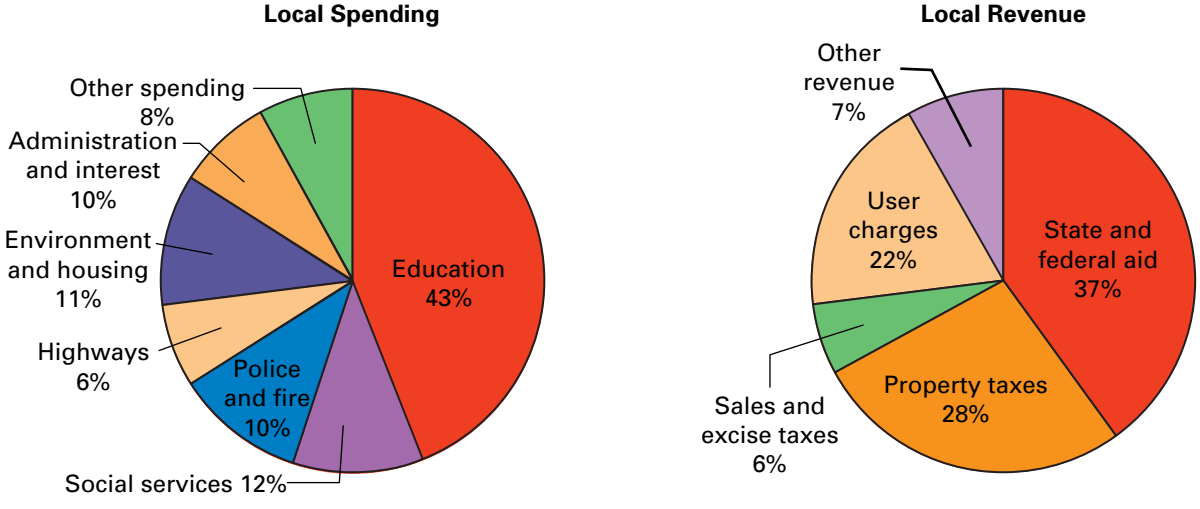
Composition of State Spending and State Revenue



The biggest portion of state spending goes toward aid to local governments. The largest source of state revenue is aid from the federal government.

Source: Based on general expenditure figures for fiscal year 2003 from the U.S. Census Bureau.

Composition of Local Spending and Local Revenue

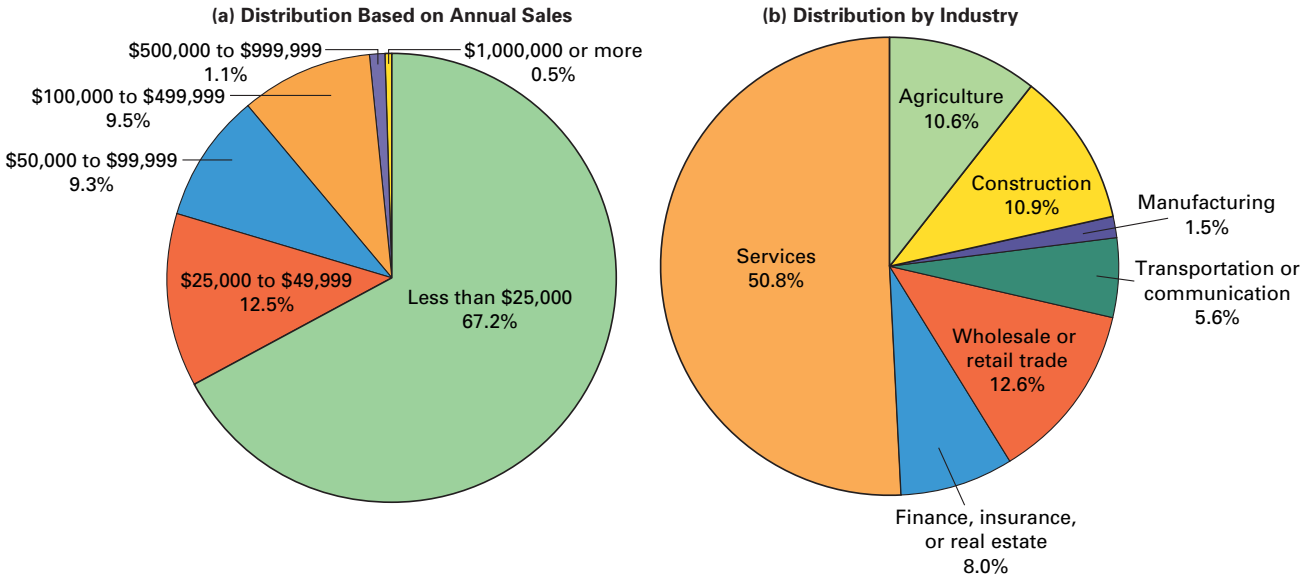


The largest category of local spending is education. State and federal aid make up the largest category of local revenue.

Source: Based on general expenditure figures for fiscal year 2003 from the U.S. Census Bureau.

Business Data

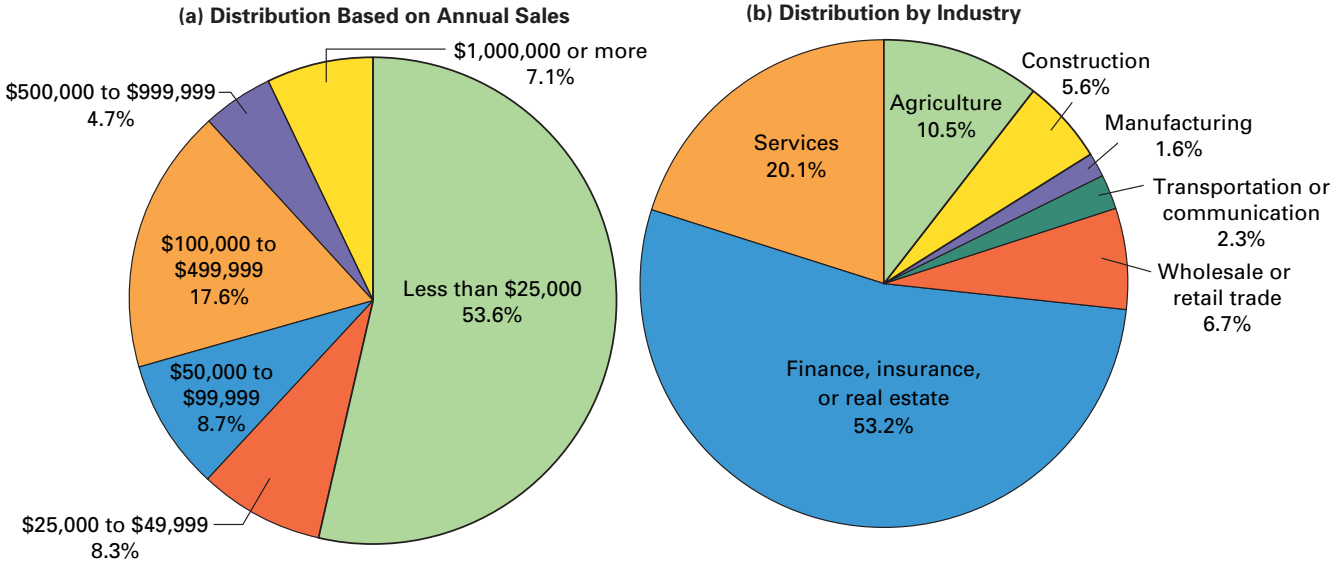
Distribution of Sole Proprietorships Based on Annual Sales and by Industry



Two-thirds of all sole proprietorships earn $25,000 or less a year. Most sole proprietorships are service businesses.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726, 727, and 795.

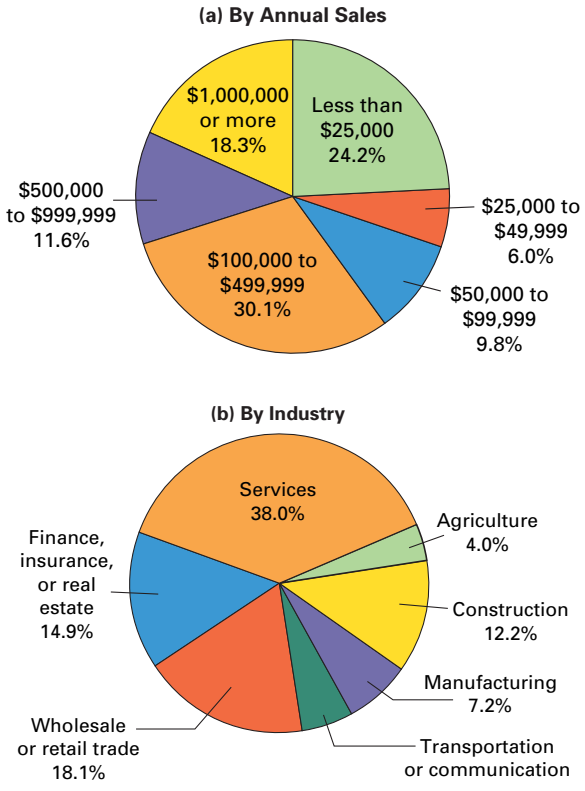
Distribution of Partnerships Based on Annual Sales and Industry



Most partnerships had annual sales of less than $25,000. More than half of all partnerships are in finance, insurance, or real estate.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726, 727, and 795.

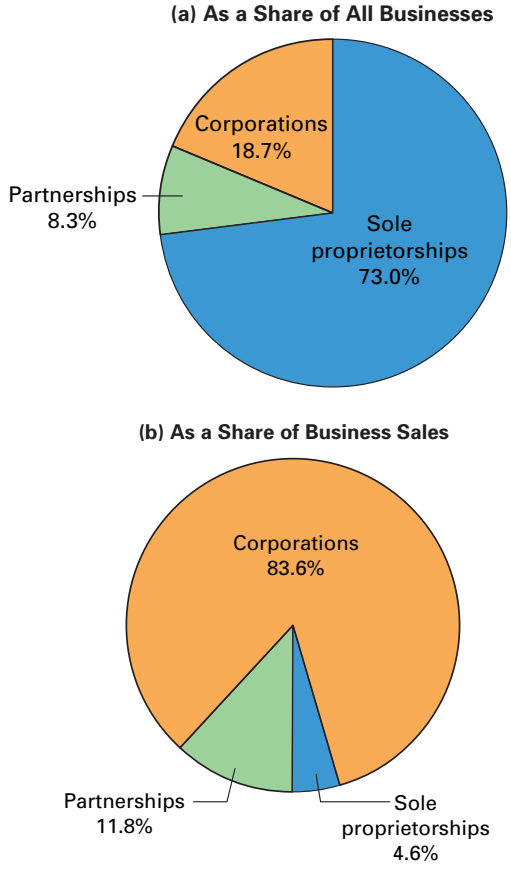
Distribution of Corporations by Annual Sales and by Industry



Nearly one in five corporations had annual sales of $1 million or more. Nearly four in ten corporations are in services, such as health care.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States,* 2006, Tables 726 and 727.

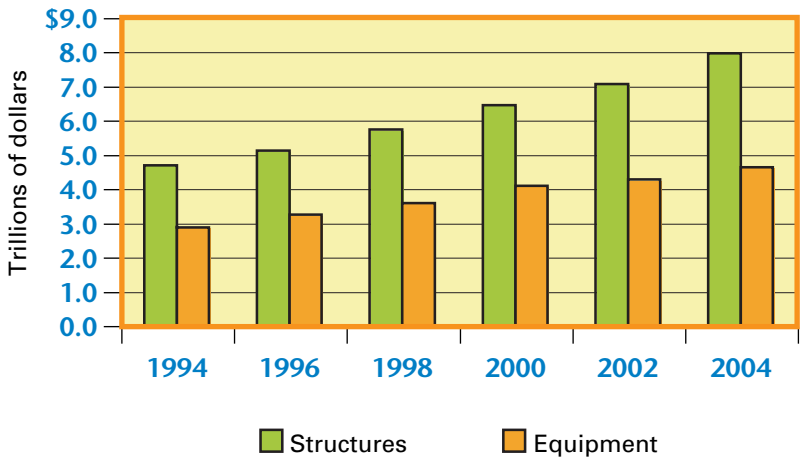
Comparing Corporations with Sole Proprietorships and Partnerships



Sole proprietorships account for nearly three-quarters of all U.S. businesses, but corporations account for most business sales.

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States*, 2006, Table 725.

Value of Business Structures and Equipment in the United States



The combined value of business structures and business equipment increased by $5.0 trillion between 1994 and 2004.

Source: Developed from estimates in the U.S. Department of Commerce, *Survey of Current Business,* September 2005, Table 1, p. 15. Structures include factories, buildings, and other permanent business fixtures. Figures are adjusted to eliminate the effects of inflation.

Glossary

A

Ability-to-pay tax principle
Those with a greater ability to pay, such as those with a higher income, should pay more of a tax (p. 423)

Absolute advantage
To be able to make something using fewer resources than other producers require (p. 51)

Aggregate demand
The relationship between the average price of aggregate output and the quantity of aggregate output demanded, with other things constant (p. 338)

Aggregate demand curve
A curve representing the relationship between the economy's price level and real GDP demanded per period, with other things constant (p. 338)

Aggregate expenditure
Total spending on all final goods and services produced in the economy during the year (p. 319)

Aggregate income
The sum of all the income earned by resource suppliers in the economy during a given year (p. 320)

Aggregate output
A composite measure of all final goods and services produced in an economy during a given period; real GDP (p. 338)

Aggregate supply curve
A curve representing the relationship between the economy's price level and real GDP supplied per period, with other things constant (p. 340)

Allocative efficiency
Occurs when a firm produces the output most valued by consumers (p. 177)

Annual percentage yield (APY)
Formula banks must use to calculate interest they pay on deposits (p. 644)

Annually balanced budget
Matching annual spending with annual revenue, except during war years; approach to the federal budget prior to the Great Depression (p. 456)

Antitrust activity
Government efforts aimed at preventing monopoly and promoting competition in markets where competition is desirable (p. 207)

Antitrust laws
Laws that prohibit anticompetitive behavior and promote competition in markets where competition is desirable (p. 71)

Applied research
Research that seeks answers to particular questions or applies scientific discoveries to develop specific products (p. 369)

Articles of incorporation
A written application to the state seeking permission to form a corporation (p. 238)

Asset
Any physical property or financial claim that is owned (p. 512)

Automatic stabilizers
Government spending and taxing programs that year after year automatically reduce fluctuations in disposable income, and thus in consumption, over the business cycle (p. 461)

B

Balance of payments
A record of all economic transactions between residents of one country and residents of the rest of the world during a given period (p. 558)

Balance sheet
A financial statement showing assets, liabilities, and net worth at a given point in time; assets must equal liabilities plus net worth, so the statement is in balance (p. 512)

Barriers to entry
Restrictions on the entry of new firms into an industry (p. 192)

Barter
A system of exchange in which products are traded directly for other products (p. 53)

Basic research
The search for knowledge without regard to how that knowledge will be used; a first step toward technological advancement (p. 369)

Benefits-received tax principle
Those who receive more benefits from the government program funded by the tax should pay more of that tax (p. 423)

Bilateral aid
Development aid from one country to another (p. 590)

Binding arbitration
When labor negotiations break down and the public interest is involved, a neutral third party is brought in to impose a settlement that both sides must accept (p. 270)

Bond
A contract promising to repay borrowed money on a designated date and pay interest along the way (p. 295)

Brain drain
A developing country's loss of educated migrants to industrial market countries (p. 589)

Budget
A consumer's plan for receiving and using income (p. 613)

Bureaus
Government agencies charged with implementing legislation and financed through legislative bodies (p. 442)

Business cycle
Fluctuations reflecting the rise and fall of economic activity relative to the long-term growth trend of the economy (p. 330)

C

Capital deepening
An increase in the quantity and quality of capital per worker; one source of rising labor productivity (p. 356)

Capital goods
All human creations used to produce goods and services; for example, factories, trucks, and machines (p. 7)

Cartel
A group of firms that agree to act as a single monopolist to increase the market price and maximize the group's profits (p. 202)

Cease and desist order
FTC-issued directive to stop a firm making a false or misleading advertising claim (p. 629)

Certificate of deposit (CD)
Savings instrument with fixed interest rate and fixed maturity date (p. 645)

Check
A written order instructing the bank to pay someone from an amount deposited (p. 489)

Checkable deposits
Deposits in financial institutions against which checks can be written and ATM, or debit, cards can be applied (p. 499)

Classical economists
A group of laissez-faire economists, who believed that economic downturns corrected themselves in the long run through natural market forces (p. 455)

Cluster
Firms in the same industry or in related industries that group together in a region, such as Wall Street, Hollywood, or Silicon Valley (p. 373)

Collateral
An asset owned by the borrower that can be sold to pay off the loan in the event the loan is not repaid (p. 293)

Collective bargaining
The process by which representatives of the union and the employer negotiate wages, employee benefits, and working conditions (p. 270)

Commodity
A product that is identical across sellers, such a bushel of wheat (p. 190)

Commodity money
Anything that serves both as money and as a commodity, such as gold (p. 483)

Comparison shopping
The act of reviewing products and prices offered by different businesses for similar products before making a purchasing decision (p. 614)

Compound interest
Computed on the amount saved plus the interest previously earned (p. 644)

Conglomerate merger
One firm combines with another firm in a different industry, such as a merger between a plastics maker and an electronics firm (p. 301)

Consumer
Anyone who uses a good or service (p. 610)

Consumer loan
Borrowing money to be repaid in regular installments over time (p. 619)

Consumer price index (CPI)
Measure of inflation based on the cost of a fixed "market basket" of goods and services purchased by a typical family (p. 327)

Consumer Product Safety Commission (CPSC)
Federal agency created to protect consumers from dangerous products they might purchase or use (p. 629)

Consumer sales credit
Amounts charged to an account that involves variable payments over time (p. 619)

Consumer surplus
The difference between the most that consumers are willing and able to pay for a given quantity of a good and what they actually pay (p. 180)

Consumption
Household purchases of final goods and services (p. 317)

Convergence theory
A theory predicting that the standard of living in economies around the world will grow more similar over time, with poorer countries gradually closing the gap with richer ones (p. 597)

Cooperative
An organization consisting of people who pool their resources to buy and sell more efficiently than they could independently (p. 241)

Corporate bond
Loan that entitles investor to be repaid at the specified date and receive interest until that date (p. 655)

Corporate stock
Shares of ownership in a corporation (p. 651)

Corporation
A legal entity with an existence that is distinct from the people who organize, own, and run it (p. 238)

Cost-push inflation
Inflation resulting from a leftward shift of the aggregate supply curve; reduced supply pushes up the price level (p. 393)

Credit
The ability to borrow now, based on the promise of repayment in the future (p. 291)

Credit history
A person's record of paying bills and debts over time (p. 622)

Credit rating
The measure of a person's creditworthiness (p. 622)

Credit scoring
A system that assigns a number, or score, to each consumer indicating whether this person is a good or bad credit risk (p. 622)

Creditworthy
The measure of your dependability to repay a loan (p. 622)

Crowding in
Government spending stimulates private investment in an otherwise stagnant economy (p. 470)

Crowding out
Private investment falls when larger government deficits drive up interest rates (p. 470)

Current account
That portion of the balance of payment that records exports and imports of goods and services, net investment income, and net transfers (p. 558)

Cycle of poverty
Children in welfare families may end up on welfare themselves when they grow up (p. 409)

D

Decision-making lag
The time needed to decide what to do once the problem has been identified (p. 463)

Decrease in demand
Consumers are less willing and able to buy the product at every price (p. 169)

Decrease in supply
Producers are less willing and able to supply the product at every price (p. 171)

Deductible
An amount an insured person must pay before the insurance company pays anything (p. 662)

Demand
A relation showing the quantities of a good that consumers are willing and able to buy at various prices per period, other things constant (p. 100)

Demand curve
A curve or line showing the quantities of a particular good demanded at various prices during a given time period, other things constant (p. 104)

Demand for loans curve
A downward-sloping curve showing the negative relationship between the interest rate and the quantity of loans demanded, other things constant (p. 286)

Demand-pull inflation
Inflation resulting from a rightward shift of the aggregate demand curve; greater demand pulls up the price level (p. 392)

Demand-side economics
Macroeconomic policy that focuses on shifting the aggregate demand curve as a way of promoting full employment and price stability (p. 400)

Depreciation
The value of the capital stock that is used up or becomes obsolete in producing GDP during the year (p. 324)

Deregulation
A reduction in government control over prices and firm entry in previously regulated markets, such as airlines and trucking (p. 210)

Derived demand
The demand for a resource that arises from the demand for the product that resource produces (p. 252)

Developing countries
Countries with a lower standard of living because they have relatively little human and physical capital (p. 361); nations with low GDP per capita, high rates of illiteracy, high unemployment, and high fertility rates (p. 578)

Discount rate
Interest rate the Fed charges banks that borrow reserves (p. 493)

Discretionary fiscal policy
Legislative changes in government spending or taxing to promote macroeconomic goals (p. 461)

Disequilibrium
A mismatch between quantity demanded and quantity supplied as the market seeks equilibrium; usually temporary, except where government intervenes to set the price (p. 178)

Diversification
Investing in a wide variety of firms (p. 654)

Dividends
That portion of after-tax corporate profit paid out to shareholders (p. 295)

Division of labor
An action that sorts the production process into separate tasks to be carried out by separate workers (p. 53)

Doha Round
The first WTO negotiations aims to help developing countries by reducing barriers that harm their exports (p. 552)

E

Economic growth
An expansion of the economy's production possibilities or ability to produce (p. 45)

Economic system
The set of mechanisms and institutions that resolve the *what*, *how*, and *for whom* questions for an economy (p. 34)

Economic theory, economic model
A simplification of economic reality used to make predictions about the real world (p. 11)

Economics
The study of how people use their scarce resources to satisfy their unlimited wants (p. 6)

Economies of scale
Forces that reduce a firm's average cost as the firm's size, or scale, increases in the long run (p. 152)

Economy
The structure of economic activity in a locality, a region, a country, a group of countries, or the world (p. 316)

Effectiveness lag
The time needed for changes in policy to affect the economy (p. 463)

Efficiency
Producing the maximum possible output from available resources (p. 42)

Elasticity of demand
Measures how responsive quantity demanded is to a price change; the percentage change in quantity demanded divided by the percentage change in price (p. 108)

Elasticity of supply
A measure of the responsiveness of quantity supplied to a price change; the percentage change in quantity supplied divided by the percentage change in price (p. 133)

Entrepreneur
A profit-seeker who develops a new product or process and assumes the risk of profit or loss (p. 7)

Environmental Protection Agency (EPA)
Federal agency that interprets and enforces laws passed by Congress that involve the environment (p. 630)

Equilibrium interest rate
The only interest rate at which the quantity of loans demanded equals the quantity of loans supplied (p. 287)

Equilibrium wage
The wage at which the quantity of labor firms want to hire exactly matches the quantity workers want to supply (p. 254)

Euro
The new European common currency (p. 532)

European Union (EU)
Twenty-five nations joined to enhance economic cooperation (p. 545)

Excess reserves
Bank reserves in excess of required reserves (p. 513)

Exchange rate
The price measured in one country's currency of purchasing one unit of another country's currency (p. 565)

Expansion
The phase of economic activity during which the economy's total output increases (p. 330)

Export promotion
A development strategy that concentrates on producing for the export market (p. 588)

F

Featherbedding
Union efforts to force employers to hire more workers than demanded for the task (p. 272)

Federal funds market
A market for overnight lending and borrowing of reserves held by the Fed for banks (p. 522)

Federal funds rate
The interest rate banks charge one another to borrow reserves overnight; the Fed's target interest rate (p. 522)

Federal Open Market Committee (FOMC)
Twelve-member group that makes decisions about open-market operations (p. 493)

Federal Reserve System (the Fed)
Established in 1913 as the central bank and monetary authority of the United States (p. 492)

Federal Trade Commission (FTC)
Government agency that ensures businesses compete and market their products fairly and honestly (p. 629)

Fertility rate
The average number of births during each woman's lifetime (p. 579)

Fiat money
Money of no value in itself and not convertible into gold, silver, or anything else of value; declared money by government decree (p. 489)

Financial account
That portion of the balance of payments that records international transactions involving financial assets, such as stocks and bonds, and real assets, such as factories and office buildings (p. 561)

Financial capital
Money needed to start or expand a business (p. 223)

Financial intermediaries
Banks and other institutions that serve as go-betweens, accepting funds from savers and lending them to borrowers (p. 291)

Financial planner
Expert who gives investment advice for a fee (p. 657)

Firm
A business unit or enterprise formed by a profit-seeking entrepreneur who combines resources to produce goods and services (p. 63)

Fiscal policy
The federal government's use of taxing and public spending to influence the national economy (p. 72)

Fixed cost
Any production cost that is independent of the firm's output (p. 148)

Fixed exchange rate
Exchange rate fixed within a narrow range and maintained by central banks' ongoing purchases and sales of currencies (p. 569)

Flexible exchange rate
Exchange rate determined by the forces of supply and demand without government intervention (p. 569)

Food and Drug Administration (FDA)
Federal agency that sets standards for foods and drugs produced or marketed in the United States (p. 629)

Foreign aid
An international transfer of cash, goods, services, or other assistance to promote economic development (p. 590)

Foreign exchange
Foreign money needed to carry out international transactions (p. 565)

Fractional reserve banking system
Only a portion of bank deposits is backed by reserves (p. 489)

Full employment
Occurs when there is no cyclical unemployment; relatively low unemployment (p. 382)

G

General Agreement on Tariffs and Trade (GATT)
An international tariff-reduction treaty adopted in 1947 that resulted in a series of negotiated "rounds" aimed at freer trade (p. 551)

Good
An item you can see, feel, and touch; requires scarce resources to produce; and satisfies human wants (p. 8)

Government budget
A plan for government spending and revenues for a specified period, usually a year (p. 430)

Gross domestic product (GDP)
The market value of all final goods and services produced in a nation during a given period, usually a year (p. 316)

Group of Seven (G-7)
The seven leading industrial market economies, including the United States, United Kingdom, France, Germany, Italy, Japan, and Canada (p. 362)

H

Household
The most important economic decision maker, consisting of all those who live under one roof (p. 62)

Human capital
The accumulated knowledge, skill, and experience of the labor force (p. 354)

Human resources
The broad category of human efforts, both physical and mental, used to produce goods and services (p. 7)

I

Identity theft
Crime in which one person fraudulently uses another's identity to obtain credit or to access financial accounts (p. 632)

Implementation lag
The time needed to execute a change in policy (p. 463)

Import substitution
A development strategy that emphasizes domestic manufacturing of products that are currently imported (p. 588)

Income-assistance programs
Government programs that provide money and in-kind assistance to poor people (p. 86)

Increase in demand
Consumers are more willing and able to buy the product at every price (p. 168)

Increase in supply
Producers are more willing and able to supply the product at every price (p. 170)

Individual demand
The demand of an individual consumer (p. 105)

Industrial market countries
The advanced market economies of Western Europe, North America, Australia, New Zealand, and Japan; also called developed countries (p. 361); Economically advanced market countries of Western Europe, North America, Australia, New Zealand, and Japan (p. 578)

Industrial policy
The view that government—using taxes, subsidies, and regulations—should nurture the industries and technologies of the future, thereby giving domestic industries an advantage over foreign competition (p. 372)

Industrial Revolution
Development of large-scale production during the eighteenth century (p. 64)

Inflation
An increase in the economy's price level (p. 392)

Initial public offering (IPO)
The initial sale of corporate stock to the public (p. 295)

Innovation
The process of turning an invention into a marketable product (p. 225)

Insurance
Protection you purchase against losses beyond your ability to withstand (p. 661)

Interest rate
Annual interest expressed as a percentage of the amount borrowed or saved (p. 285)

Investing
Using your savings in a way that earns income to create a return (p. 651)

Investment
The purchase of new plants, new equipment, new buildings, new residences, and net additions to inventories (p. 318)

L

Labor
The physical and mental effort used to produce goods and services (p. 7)

Labor force
Those in the adult population who are either working or looking for work (p. 384)

Labor force participation rate
The number in the labor force divided by the adult population (p. 385)

Labor productivity
Output per unit of labor; measured as total output divided by the hours of labor employed to produce that output (p. 354)

Labor union
A group of workers who join together to seek higher pay and better working conditions by negotiating a labor contract with their employers (p. 270)

Laissez-faire
The doctrine that the government should not intervene in a market economy beyond the minimum required to maintain peace and property rights (p. 398)

Law of comparative advantage
The worker, firm, region, or country with the lowest opportunity cost of producing an output should specialize in that output (p. 51)

Law of demand
The quantity of a good demanded per period relates inversely to its price, other things constant (p. 100)

Law of diminishing marginal utility
The more of a good a person consumes per period, the smaller the increase in total utility from consuming one more unit, other things constant (p. 101)

Law of diminishing returns
As more of a variable resource is added to a given amount of fixed resources, marginal product eventually declines and could become negative (p. 146)

Law of increasing opportunity cost
Each additional increment of one good requires the economy to give up successively larger increments of the other good (p. 44)

Law of supply
The quantity of a good supplied in a given time period is usually directly related to its price, other things constant (p. 130)

Leading economic indicators
Measures that usually predict, or lead to, recessions or expansions (p. 333)

Liability
The legal obligation to pay any debts of the business (p. 231); an amount owed (p. 512)

Liability insurance
Protects against losses from injuries you cause to another person or damage you cause to another's property (p. 662)

Limited liability company (LLC)
Business with limited liability for some owners, single taxation of business income, and no ownership restrictions (p. 241)

Limited liability partnership (LLP)
Like a limited liability company but more easily converted from an existing partnership (p. 241)

Limited partnership
At least one general partner runs the business and bears unlimited personal liability; other partners provide financial capital but have limited liability (p. 233)

Line of credit
An arrangement with a bank through which a business can quickly borrow needed cash (p. 292)

Long run
A period during which all of a firm's resources can be varied (p. 146)

Long-run average cost curve
A curve that indicates the lowest average cost of production at each rate of output when the firm's size is allowed to vary (p. 152)

M

M1
The narrow definition of the money supply; consists of currency (including coins) held by the nonbanking public, checkable deposits, and traveler's checks (p. 498)

M2
A broader definition of the money supply consisting of M1 plus savings deposits, small-denomination time deposits, and money market mutual fund accounts owned by households (p. 500)

Marginal
Incremental, additional, extra, or one more; refers to a change in an economic variable, a change in the status quo (p. 13)

Marginal cost
The change in total cost resulting from a one-unit change in output; the change in total cost divided by the change in output (p. 149)

Marginal product
The change in total product resulting from a one-unit change in a particular resource, all other resources constant (p. 146)

Marginal revenue
The change in total revenue from selling another unit of the good (p. 150)

Marginal tax rate
The percentage of each additional dollar of income that goes to pay a tax (p. 425)

Marginal utility
The change in total utility resulting from a one-unit change in consumption of a good (p. 101)

Market
The means by which buyers and sellers carry out exchange (p. 15)

Market demand
The sum of the individual demands of all consumers in the market (p. 105)

Market economics
Study of economic behavior in particular markets, such as the market for computers or for unskilled labor (p. 14)

Market economy
Describes the U.S. economic system, where markets play a relatively large role (p. 38)

Market for loans
The market that brings together borrowers (the demanders of loans) and savers (the suppliers of loans) to determine the market interest rate (p. 287)

Market power
The ability of a firm to raise its price without losing all sales to rivals (p. 192)

Market structure
Important features of a market, including the number of buyers and sellers, product uniformity across sellers, ease of entering the market, and forms of competition (p. 190)

Maximizing political support
The objective assumed to guide the behavior of elected officials; comparable to profit maximization by firms and utility maximization by households (p. 440)

Median income
The middle income when a group of incomes is ranked from lowest to highest (p. 83)

Mediator
An impartial observer brought in when labor negotiations break down to suggest how to resolve differences (p. 270)

Medium of exchange
Anything generally accepted by all parties in payment for goods or services (p. 483)

Merchandise trade balance
The value of a country's exported goods minus the value of its imported goods during a given period (p. 558)

Merger
The combination of two or more firms to form a single firm (p. 207)

Minimum wage law
Establishes a minimum amount that an employer can pay a worker for an hour of labor (p. 266)

Mixed economy
An economic system that mixes central planning with competitive markets (p. 38)

Monetary policy
The central bank's attempts to control the money supply to influence the national economy (p. 72)

Money
Anything that everyone is willing to accept in exchange for goods and services (p. 53)

Money demand
The relationship between how much money people want to hold and the interest rate (p. 519)

Money market accounts
Bank accounts that allow consumers to deposit or withdraw funds at any time and for which interest rates vary from day to day (p. 646)

Money multiplier
The multiple by which the money supply can ncrease as a result of an increase in excess reserves in the banking system (p. 514)

Money supply
The stock of money available in the economy at a particular time (p. 520)

Monopolistic competition
A market structure with low entry barriers and many firms selling products differentiated enough that each firm's demand curve slopes downward (p. 200)

Monopoly
The sole supplier of a product with no close substitutes (p. 191)

Movement along a given demand curve
Change in quantity demanded resulting from a change in the price of the good, other things constant (p. 120)

Movement along a supply curve
Change in quantity supplied resulting from a change in the price of the good, other things constant (p. 142)

Multilateral aid
Development aid from an international organization, such as the World Bank, that gets funds from many countries (p. 590)

Multinational corporation (MNC)
A large corporation that makes and sells its products around the world (p. 303)

Multiplier effect
Any change in fiscal policy affects aggregate demand by more than the original change in spending or taxing (p. 456)

Mutual fund
Financial organization that accepts funds from many people and invests them in a variety of stocks (p. 654)

N

National economics
Study of the economic behavior of the economy as a whole, especially the national economy (p. 15)

Natural monopoly
One firm that can serve the entire market at a lower per-unit cost than two or more firms can (p. 71)

Natural rate of unemployment
The unemployment rate when the economy is producing its potential level of output (p. 452)

Natural resources
So-called "gifts of nature" used to produce goods and services; includes both renewable and exhaustible resources (p. 7)

Negative externalities
By-products of production or consumption that impose costs on third parties, neither buyers nor sellers (p. 78)

Net worth
Assets minus liabilities; also called owners' equity (p. 512)

Nominal GDP
The economy's aggregate output based on prices at the time of the transaction; current-dollar GDP (p. 325)

Nominal interest rate
The interest rate expressed in current dollars as a percentage of the amount loaned; the interest rate on the loan agreement (p. 395)

Not-for-profit organizations
Groups that do not pursue profit as a goal; they engage in charitable, educational, humanitarian, cultural, professional, or other activities, often with a social purpose (p. 242)

O

Oligopoly
A market structure with a small number of firms whose behavior is interdependent (p. 201)

Open-access goods
Goods that are rival in consumption but exclusion is costly (p. 77)

Open-market operations
Buying or selling U.S. government securities as a way of regulating the money supply and interest rates (p. 494)

Opportunity cost
The value of the best alternative passed up for the chosen item or activity (p. 20)

P

Partnership
Two or more people agree to contribute resources to the business in return for a share of the profit (p. 232)

Payroll taxes
Taxes deducted from paychecks to support Social Security and Medicare (p. 431)

Perfect competition
A market structure with many fully informed buyers and sellers of an identical product and ease of entry (p. 190)

Personal finance
The way you plan to spend or save your income (p. 611)

Personal insurance
Protects against financial loss from injury, illness, or unexpected death of the insured person (p. 663)

Physical capital
The machines, buildings, roads, airports, communications networks, and other manufactured creations used to produce goods and services; also called capital goods (p. 354)

Physical infrastructure
Transportation, communication, energy, water, and sanitation systems provided by or regulated by government (p. 594)

Policy
Legal contract between an insured person and an insurance company (p. 661)

Positive externalities
By-products of consumption or production that benefit third parties, who are not buyers or sellers (p. 79)

Potential output
The economy's maximum sustainable output in the long run (p. 452)

Price ceiling
A maximum legal price above which a product cannot be sold (p. 178)

Price floor
A minimum legal price below which a product cannot be sold (p. 178)

Price level
A composite measure reflecting the prices of all goods and services in the economy relative to prices in a base year (p. 338)

Prime rate
The interest rate lenders charge for loans to their most trustworthy business borrowers (p. 293)

Private corporation
Ownership limited to just a few people, sometimes only family members; shares are not publicly traded (p. 239)

Private goods
Goods with two features: (1) the amount consumed by one person is unavailable for others and (2) nonpayers can easily be excluded (p. 76)

Private property rights
Legal claim that guarantees an owner the right to use a resource or to charge others for its use (p. 69)

Privatization
The process of turning public enterprises into private enterprises (p. 597)

Production possibilities frontier (PPF)
Shows the possible combinations of the two types of goods that can be produced when available resources are employed efficiently (p. 42)

Productive efficiency
Occurs when a firm produces at the lowest possible cost per unit (p. 177)

Productive resources
The inputs used to produce the goods and services that people want (p. 6)

Productivity
The value of output produced by a resource (p. 252); compares total output to a specific measure of input; usually reflects an average, such as bushels of grain per acre of farm land (p. 354)

Progressive taxation
The tax as a percentage of income increases as income increases (p. 425)

Property insurance
Protects policyholders from losses to their property (p. 662)

Proportional taxation
The tax as a percentage of income remains constant as income increases; also called a flat tax (p. 425)

Public goods
Goods that, once produced, are available for all, but nonpayers are not easily excluded (p. 76)

Publicly traded corporation
Owned by many shareholders; shares can be bought or sold on stock exchanges (p. 239)

Pure command economy
An economic system in which all resources are government-owned and production is coordinated by the central plans of government (p. 37)

Pure market economy
An economic system with no government involvement so that private firms account for all production (p. 35)

Q

Quantity demanded
The amount demanded at a particular price (p. 104)

Quasi-public goods
Goods that, once produced, are available to all, but nonpayers are easily excluded (p. 76)

Quota
A legal limit on the quantity of a particular product that can be imported (p. 550)

R

Rational consumer choice
A choice to buy or not to buy a product so that your satisfaction is the greatest possible per dollar spent (p. 615)

Rational ignorance
A stance adopted by voters when they find that the cost of understanding and voting on a particular issue exceeds the benefit expected from doing so (p. 441)

Real GDP
The economy's aggregate output measured in dollars of constant purchasing power; GDP measured in terms of the goods and services produced (p. 325)

Real interest rate
The interest rate expressed in dollars of constant purchasing power as a percentage of the amount loaned; the nominal interest rate minus the inflation rate (p. 395)

Recession
A decline in total production lasting at least two consecutive quarters, or at least six months (p. 330)

Recognition lag
The time needed to identify a macroeconomic problem (p. 463)

Regressive taxation
The tax as a percentage of income decreases as income increases (p. 425)

Representative money
Bank notes that exchange for a specific commodity, such as gold (p. 489)

Required reserve ratio
A Fed regulation that dictates the minimum fraction of deposits each bank must keep in reserve (p. 512)

Required reserves
The dollar amount that must be held in reserve; checkable deposits multiplied by the required reserve ratio (p. 512)

Resource complements
One resource works with the other in production; a decrease in the price of one increases the demand for the other (p. 256)

Resource substitutes
One resource can replace another in production; an increase in the price of one resource increases the demand for the other (p. 255)

Retained earnings
That portion of after-tax corporate profit reinvested in the firm (p. 295)

Return
Income earned from funds that are not spent (p. 643)

Right-to-work law
State law that says a worker at a union company does not have to join the union or pay union dues to hold a job there (p. 270)

Rules of the game
The formal and informal institutions that provide production incentives and promote economic activity, such as laws, customs, and conventions (p. 356)

S

Saving
The act of choosing not to spend current income (p. 642)

Scarcity
A condition facing all societies because there are not enough productive resources to satisfy people's unlimited wants (p. 6)

S corporation
Organization that offers limited liability combined with the single taxation of business income; must have no more than 100 stockholders and no foreign stockholders (p. 240)

Secured loan
Loan for which property is pledged to back its repayment (p. 620)

Securities
Corporate stock and corporate bonds (p. 295)

Service
Something not physical that requires scarce resources to produce and satisfies human wants (p. 8)

Shift of a demand curve
Increase or decrease in demand resulting from a change in one of the determinants of demand other than the price of the good (p. 120)

Shift of a supply curve
Increase or decrease in supply resulting from a change in one of the determinants of supply other than the price of the good (p. 142)

Short run
A period during which at least one of a firm's resources is fixed (p. 146)

Shortage
At a given price, the amount by which quantity demanded exceeds quantity

supplied; a shortage usually forces the price up (p. 162)

Social insurance
Cash transfers for retirees, the unemployed, and others with a work history and a record of contributions to the program (p. 86)

Soft budget constraint
In command economies, the budget condition faced by state enterprises that are subsidized when they lose money (p. 597)

Sole proprietorship
The simplest form of business organization; a firm that is owned and run by one person, but sometimes hires other workers (p. 230)

Specialization
Occurs when individual workers focus on single tasks, enabling each one to be more efficient and productive (p. 51)

Stagflation
A decline, or stagnation, of a nation's output accompanied by a rise, or inflation, in the price level (p. 401)

Standard of living
An economy's level of prosperity; best measured by the value of goods and services produced on average per person (p. 354)

Strike
A labor union's attempt to withhold labor from a firm (p. 270)

Sunk cost
A cost you have already incurred and cannot recover, regardless of what you do now (p. 22)

Supply
A relation showing the quantities of a good producers are willing and able to sell at various prices during a given period, other things constant (p. 130)

Supply curve
A curve or line showing the quantities of a particular good supplied at various prices during a given time period, other things constant (p. 130)

Supply of loans curve
An upward-sloping curve showing the positive relationship between the interest rate and the quantity of loans supplied, other things constant (p. 287)

Supply-side economics
Macroeconomic policy that focuses on a rightward shift of the aggregate supply curve through tax cuts or other changes that increase production incentives (p. 402)

Surplus
At a given price, the amount by which quantity supplied exceeds quantity demanded; a surplus usually forces the price down (p. 162)

T

Tariff
A tax on imports (p. 550)

Tastes
Consumer preferences; likes and dislikes in consumption; assumed to be constant along a given demand curve (p. 120)

Tax incidence
Indicates who actually bears the burden of a tax (p. 424)

Total cost
The sum of fixed cost plus variable cost (p. 148)

Total product
The total output of the firm per period (p. 146)

Total revenue
Price multiplied by the quantity demanded at that price (p. 109)

Trade deficit
The amount by which the value of merchandise imports exceeds the value of merchandise exports during a given period (p. 558)

Trade surplus
The amount by which the value of merchandise exports exceeds the value of merchandise imports during a given period (p. 558)

Traditional economy
An economic system shaped largely by custom or religion (p. 39)

Transitional economy
An economic system in the process of shifting from central planning to competitive markets (p. 39)

U

U.S. Agency for International Development (USAID)
The federal agency that coordinates foreign aid to the developing world (p. 590)

Underemployment
Workers are overqualified for their jobs or work fewer hours than they would prefer (p. 383)

Unemployment benefits
Cash transfers to unemployed workers who lost their jobs, actively seek work, and meet other qualifications (p. 388)

Unemployment rate
The number of people without jobs who are looking for work divided by the number in the labor force (p. 384)

Unsecured loan
Loan for which no specific property is pledged by the borrower that can be used to satisfy the debt if payments are not made (p. 620)

Uruguay Round
The most recently completed and most comprehensive of the eight postwar multilateral trade negotiations under GATT; created the World Trade Organization (p. 551)

Utility
The level of satisfaction from consumption or sense of well-being (p. 63)

V

Variable cost
Any production cost that changes as output changes (p. 148)

Vertical merger
One firm combines with another from which it had purchased inputs or to which it had sold output, such as a merger between a steel producer and an automaker (p. 301)

W

Welfare reform
An overhaul of the welfare system in 1996 that imposed a lifetime welfare limit of five years per recipient and other conditions (p. 410)

World output
The combined GDP of all nations in the world (p. 544)

World price
The price at which a good is traded internationally; determined by the world supply and world demand for the good (p. 550)

World Trade Organization (WTO)
The legal and institutional foundation of the multilateral trading system that succeeded GATT in 1995 (p. 552)

Spanish Glossary

A

Ability-to-pay tax principle
principio de la habilidad de pagar el impuesto Aquellos con más habilidad de pagar, tal como aquellos que tienen más ingresos, deben pagar más del impuesto (p. 423)

Absolute advantage
ventaja absoluta El poder hacer algo usando menos recursos que lo que requieren otros productores (p. 51)

Aggregate demand
demanda total La relación entre el nivel del precio de la economía y la cantidad de producción total exigida, otras cosas constantes (p. 338)

Aggregate demand curve
curva de demanda total Una curva que representa la relación entre el nivel del precio de la economía y el verdadero PIB exigido por periodo, otras cosas constantes (p. 338)

Aggregate expenditure
gastos totales Gasto total en todo bien y servicio terminado y producido en la economía durante el año (p. 319)

Aggregate income
ingresos totales La suma de todo el ingreso ganado por proveedores de recursos en la economía durante un año asignado (p. 320)

Aggregate output
producción total Una combinación de medidas de todos los bienes y servicios producidos en una economía durante un periodo asignado; PIB verdadero (p. 338)

Aggregate supply curve
curva de oferta total Una curva que representa la relación entre el nivel del precio de la economía y el verdadero PIB ofrecido por periodo, otras cosas constantes (p. 340)

Allocative efficiency
eficiencia de asignar Se logra cuando una empresa produce el producto más preferido por los consumidores (p. 177)

Annual percentage yield (APY)
producción anual del porcentaje El formulario que los bancos deben utilizar para calcular el interés que pagan sobre los depósitos (p. 645)

Annually balanced budget
presupuesto anual ajustado Igualando gastos anuales con ingresos anuales, excepto durante años de guerra; aproximación al presupuesto federal antes de la Gran Depresión (p. 456)

Antitrust activity
actividad de antimonopolio Esfuerzos del gobierno dirigidos a prevenir monopolios y promover competencia en mercados donde competencia se desea (p. 207)

Antitrust laws
leyes de antimonopolio Leyes que prohiben comportamiento anticompetitivo y promueve competencia en mercados donde se desea la competencia (p. 71)

Applied research
investigación aplicada Investigación que busca respuestas a preguntas en particular o aplica descubrimientos científicos para desarrollar productos específicos (p. 369)

Articles of incorporation
artículos de la incorporación Una solicitud por escrita al estado, solicitando permiso para la formación de una corporación (p. 238)

Asset
activo Cualquier propiedad física o reclamo financiero que sea propio (p. 512)

Automatic stabilizers
estabilizadores automáticos Programas de gastos e impuestos por el gobierno que año tras año automáticamente reducen fluctuaciones en poder adquisitivo, y por lo tanto en consumo, durante el ciclo de negocios (p. 461)

Average cost
costo promedio Precio medio de una cosa o lo que vale (p. 154)

B

Balance of payments
ajuste de pagos Una constancia de todas las transacciones económicas entre residentes de un país y residentes del resto del mundo durante un tiempo asignado (p. 558)

Balance sheet
balance Un estado de cuentas que muestra los activos, los pasivos y el valor neto en una fecha asignada; como los activos tienen que igualar a los pasivos más el valor neto, el estado de cuentas está ajustado (p. 512)

Barriers to entry
obstáculos al entrar Cualquier cosa que previene nuevas empresas de competir en forma igual con empresas que existen en una industria (p. 192)

Barter
intercambiar Un sistema de comercio en el cual productos se intercambian directamente por otros productos (p. 53)

Basic research
investigación básica La búsqueda por conocimiento sin prestar atención a como se usará ese conocimiento; un primer paso hacia avances tecnológicos (p. 369)

Benefits-received tax principle
beneficios recibidos principio de impuesto Aquellos que reciben más beneficios del programa de gobierno financiado por el impuesto debe pagar más de ese impuesto (p. 423)

Bilateral aid
ayuda bilateral Ayuda de desarrollo de un país a otro (p. 560)

Binding arbitration
arbitraje fijo Cuando negociaciones de trabajo se han quebrado y el interés del público está involucrado, un tercer partidiario neutro se trae para imponer un acuerdo que los dos lados deben aceptar (p. 270)

Bond
bono Un contrato prometiendo pagar dinero prestado en una fecha designada y pagar interés en el proceso (p. 295)

Brain drain
drenaje cerebral La perdida de migrantes educados de un país en desarrollo a paises con mercados industriales (p. 559)

Budget
presupuesto El plan de un consumidor al recibir y gastar sus ingresos (p. 613)

Bureaus
departamentos Agencias del gobierno encargadas de implementar legislación y que son financiadas por apropiaciones de cuerpos legislativos (p. 442)

Business cycle
ciclo de negocio Cambios que reflejan aumentos y reducciónes de actividad económica en relación con la tendencia de crecimiento de largo plazo de la economía (p. 330)

C

Capital deepening
profundizando en capital Un aumento en la cantidad y la calidad del capital por trabajador; una fuente para aumentar productividad en el trabajo (p. 356)

Capital goods
bienes de capital Toda creación humana usada para producir bienes y servicios; por ejemplo, fábricas, camiones y máquinas (p. 7)

Cartel
cartel Un grupo de empresas que acuerda coordinar decisiones de precio para maximar beneficios del grupo al comportarse como un monopolista (p. 202)

Cease and desist order
orden de cesar y desistir Orden ó directiva emitida por la FTC para que una empresa cese de publicar anuncios falsos o engañosos (p. 628)

Certificate of deposit (CD)
certificado de deposito (CEDES) Instrumento de ahorros con índice de interés fija y fecha de madurez fija (p. 645)

Check
cheque Una orden escrita instruyendo al banco de pagarle a alguien del monto depositado (p. 489)

Checkable deposits
depositos verificables Depositos en instituciones financieras contra los cuales se puede escribir cheques y/o tarjetas de cajero automático o de débito se pueden aplicar (p. 499)

Classical economists
economistas clásicos Un grupo de laissez-faire economistas, que creían que fases de bajas en la economía eran problemas a corto plazo que se corregían por ellos mismos a largo plazo por fuerzas naturales del mercado (p. 455)

Cluster
conjunto Empresas en la misma industria o en industrias relacionadas que se agrupan en una región, tal como Wall Street (La Bolsa), Hollywood o Silicon Valley (p. 373)

Collateral
garantía Una propiedad del prestatario que se puede vender para pagar el prestamo en caso de que el prestamo no se pague (p. 293)

Collective bargaining
negociación colectiva El proceso por el cual representantes del sindicato y del empresario negocean salarios, beneficios de empleados y condiciones de trabajo (p. 270)

Commodity
bien de consumo Un producto que es idéntico entre vendedores, tal como una medida de áridos de trigo (p. 190)

Commodity money
dinero de producto Cualquier cosa que sirve tanto como dinero que como producto, tal como el oro (p. 483)

Comparison shopping
comparación de compras El acto de comparar precios y productos similares

ofrecidos por diferentes negocios antes de tomar la decisión de comprarlos (p. 614)

Compound interest
interés compuesto o cumulativo Calculado sobre la cantidad ahorrada más el interés previamente ganado (p. 644)

Conglomerate merger
fusión de conglomeración Una empresa combina con otra empresa en una industria diferente, tal como la fusión entre un productor de plásticos y una empresa de electrónicos (p. 301)

Consumer
consumidor Cualquiera que use un bien o servicio (p. 610)

Consumer loan
préstamo al consumidor Dinero prestado que puede ser pagado en plazos regulares sobre un determinado periodo de tiempo (p. 619)

Consumer price index (CPI)
índice del precio del consumidor Medida de inflación basada en el costo de un canasto fijo de bienes y servicios que se compran por una típica familia (p. 327)

Consumer Product Safety Commission (CPSC)
Comisión de Seguridad de Productos del Consumidor Agencia federal creada para proteger al consumidor de productos peligrosos que pueden ser comprados o utilizados (p. 628)

Consumer sales credit
crédito de las ventas al consumidor Las cantidades cobradas a una cuenta que involucra pagos variables sobre el transcurso del tiempo (p. 619)

Consumer surplus
excedente de consumidor La diferencia entre la máxima cantidad que consumidores quieren pagar por una cantidad determinada de un bien y lo que en realidad pagan (p. 180)

Consumption
consumo Compras por un hogar de un bien o servicio terminado excepto por nuevas residencias, las cuales cuentan como inversiones (p. 317)

Convergence theory
teoría de convergencia Una teoría que predice que el nivel de vida en economías por todo el mundo crecera más similar sobre el tiempo, con los paises más pobres gradualmente cerrando el espacio con los paises más ricos (p. 567)

Cooperative
cooperativa Una organización que consiste de personas que unen sus recursos para comprar y vender más eficientemente que lo que pudieran hacer en forma independiente (p. 241)

Corporate bond
bono corporativo Préstamo que le da derecho al inversionista ser reembolsado a la fecha especificada y recibir el interés hasta dicha fecha (p. 655)

Corporate stock
acciones de una corporación Las porciones de propiedad en una corporación (p. 651)

Corporation
corporación Una entidad legal con una existencia que es distinta de las verdaderas personas que la organizan, la poséen y la dirigen (p. 238)

Cost-push inflation
inflación de costo y empuje Inflación que resulta de un cambio hacia la izquierda de la curva de oferta total (p. 393)

Credit
crédito La habilidad de prestar ahora basada en la promesa de pagar en el futuro (p. 291)

Credit history
historial de crédito El registro de una persona de sus pagos de deudas y cuentas sobre tiempo (p. 622)

Credit rating
clasificación de crédito La medida del mérito de credito de una persona (p. 622)

Credit scoring
puntuación de crédito Un sistema que asigna un número, o calificación a cada consumidor indicando si una persona es un buen o mal riesgo para recibir crédito (p. 622)

Creditworthy
mérito de credito Las medidas de su confiabilidad de volver a pagar un préstamo (p. 622)

Crowding in
alojamiento Gastos del gobierno estimulan inversión privada en una economía muerta (p. 470)

Crowding out
desplazamiento Inversión privada cae cuando déficits más altos del gobierno hacen subir los intereses (p. 470)

Current account
cuenta actual La porción del estado de pagos que da constancia a exportaciones e importaciones de bienes y servicios,

ingresos netos de inversión, y transferencias netas (p. 558)

Cycle of poverty
ciclo de pobreza Niños en familias de bienestar pueden terminar en bienestar ellos mismos cuando crezcan (p. 409)

D

Decision-making lag
lapso para hacer una decisión El tiempo necesitado para decidir que hacer cuando el problema se ha identificado (p. 463)

Decrease in demand
reducción en demanda Los consumidores mucho menos quieren y pueden comprar el producto a cualquier precio (p. 169)

Decrease in supply
reducción en oferta Los productores mucho menos quieren y pueden ofrecer el producto a cualquier precio (p. 171)

Deductible
deducible La cantidad que una persona asegurada debe pagar antes de que la compañia de seguros page cualquier cantdidad (p. 662)

Demand
demanda Una relación que muestra las cantidades de un bien que los consumidores quieren y pueden comprar a diferentes precios por periodo, otras cosas constantes (p. 100)

Demand curve
curva de demanda Una curva o linea que muestra las cantidades de un bien en particular en demanda a varios precios durante un periodo específico, otras cosas constantes (p. 104)

Demand for loans curve
curva de demanda por prestamos Una curva con inclinación hacia abajo mostrando una relación negativa entre el índice de interés y la cantidad de prestamos exigidos, otras cosas constantes (p. 286)

Demand-pull inflation
inflación de demanda y hala Inflación que resulta por cambios hacia la derecha de la curva de demanda total (p. 392)

Demand-side economics
economía de lado de demanda Póliza de macroeconomía que enfoca en cambiar la curva de demanda total como forma de promover empleo total y estabilidad de precio (p. 400)

Depreciation
depreciación El valor de la acción capital que se usa o se vuelve obsoleto al producir PIB durante el año (p. 324)

Deregulation
deregulación Una reducción en el control del gobierno sobre los precios y entradas de empresas en mercados previamente regulados, tal como las aerolineas y el transporte por carretera (p. 210)

Derived demand
demanda derivada La demanda por un recurso se deriva de la demanda por el producto que ese recurso produce (p. 252)

Developing countries
paises en desarrollo Paises con un nivel de vida más bajo porque tienen relativamente poco capital humano y físico; también se llaman paises del Tercer Mundo (pp. 361, 548)

Discount rate
taza de descuento Taza de interés que el gobierno federal le cobra a los bancos que prestan reservas (p. 493)

Discretionary fiscal policy
póliza fiscal discrecional Cambios a gastos o impuestos por el Congreso para promover metas macroeconómicas (p. 461)

Disequilibrium
desequilibrio Algo desigual entre la cantidad exigida y la cantidad ofrecida al paso que el mercado busca equilibrio; usualmente temporal, excepto donde el gobierno interviene y fija el precio (p. 178)

Diversification
diversificación Invirtiendo en una gran variedad de empresas (p. 654)

Dividends
dividendo La porción que se paga a los accionistas, del beneficio de una corporación después de impuestos (p. 295)

Division of labor
división de trabajo Clasificación del proceso de producción en diferentes tareas que se llevan a cabo por diferentes trabajadores (p. 53)

Doha Round
Doha Round Las primeras negociaciones de la WTO con el objectivo de reducir las barreras que dañan las exportaciones de los paises en desarrollo (p. 552)

E

Economic growth
crecimiento económico Una expansión en las posibilidades de producción en la economía o en la habilidad de producir (p. 45)

Economic system
sistema económico Un conjunto de mecanismos e instituciones que resuelven las preguntas del qué, cómo y para quién para una economía (p. 34)

Economic theory, economic model
teoría de economía, modelo de economía Una simplificación de la realidad de la economía usada para hacer predicciones sobre el mundo verdadero (p. 11)

Economics
economía El estudio de como la gente usa sus recursos escasos para satisfacer sus deseos ilimitados (p. 6)

Economies of scale
economías de escala Fuerzas que reducen el costo promedio al paso que el tamaño, o escala de la empresa aumenta a largo plazo (p. 152)

Economy
economía La estructura de actividad económica en una localidad, región, país, un grupo de paises, o el mundo (p. 316)

Effectiveness lag
lapso en eficacia El tiempo necesitado para cambios en póliza para afectar la economía (p. 463)

Efficiency
eficiencia Producir el máximo producto posible de los recursos disponibles (pp. 42, 42)

Elasticity of demand
elasticidad de demanda Mide como la cantidad receptiva exigida es al cambio del precio; el cambio de porcentaje en cantidad exigida dividida por el cambio de porcentaje en precio (p. 108)

Elasticity of supply
elasticidad de oferta Una medida de receptividad de la cantidad ofrecida a un cambio de precio; el cambio de porcentaje en la cantidad dividido por el cambio de porcentaje en el precio (p. 133)

Entrepreneur
empresario Un buscador de beneficio que desarrolla un nuevo producto o proceso y asume el riesgo de beneficio o perdida (p. 7)

Environmental Protection Agency (EPA)
Agencia de Protección Ambiental Agencia federal que interpreta y hace cumplir las leyes pasadas en el Congreso que involucra al ambiente (p. 630)

Equilibrium interest rate
índice de interés en equilibrio El único índice de interés al cual la cantidad de prestamos exigidos es igual a la cantidad de prestamos ofrecidos (p. 287)

Equilibrium wage
salario de equilibrio El salario al cual no hay ni un exceso en la cantidad de trabajo en demanda ni un exceso en la cantidad de trabajo en oferta (p. 254)

Euro
euro La nueva moneda común europea (p. 532)

European Union (EU)
Union Europea Veinticinco naciones unidas para mejorar la cooperación económica (p. 545)

Excess reserves
reservas en exceso Reservas del banco en exceso de las reservas requeridas (p. 513)

Exchange rate
taza de cambio El precio de la moneda de un país medido en términos de la moneda de otro país (p. 565)

Expansion
expansión La fase de actividad económica durante la cual la producción total de la economía aumenta (p. 330)

Export promotion
promoción de exportaciones Una estrategia de desarrollo que se concentra en producir para el mercado de exportación (p. 558)

F

Featherbedding
prebendaje (contratar mano de obra que no es necesaria) Esfuerzos de un sindicato de forzar a un empresario para emplear a más trabajadores que los que se necesitan para la tarea (p. 272)

Federal funds market
mercado de fondos federales Un mercado para hacer prestamos y prestar de un día para el otro de las reservas que mantiene el gobierno federal para los bancos (p. 522)

Federal funds rate
taza de fondos federales La taza de interés que se cobra en el mercado de fondos federales; el objetivo de la taza de interés que tiene el gobierno federal (p. 522)

Federal Open Market Committee (FOMC)
Comité Federal de Mercado Abierto Un grupo de doce miembros que hacen decisiones sobre operaciones de mercado abierto (p. 493)

Federal Reserve System (the Fed)
Sistema Federal de Reserva Establecido en 1913 como el banco central y

autoridad monetaria de los Estados Unidos (p. 492)

Federal Trade Commission (FTC)
Comisión Federal del Comercio Agencia gubernamental que asegura que los negocios compitan y comercialicen sus productos de manera justa y honesta (p. 628)

Fertility rate
nivel de fertilidad El promedio en número de nacimientos durante la vida de cada mujer (p. 549)

Fiat money
dinero fiat Dinero que no se puede cambiar por nada de valor intrínsico; declarado dinero por decreto de gobierno (p. 489)

Financial account
cuenta financiera La porción del ajuste de pagos que da constancia a transacciones internacionales que tiene activos financieros, como acciones y bonos, y activos verdaderos, tal como fábricas y edificios de oficinas (p. 561)

Financial capital
capital financiero Dinero necesitado para comenzar o expandir un negocio (p. 223)

Financial intermediaries
intermediarios financieros Bancos y otras instituciones que sirven como intermediarios, aceptando fondos de ahorradores y prestandolos a los prestatarios (p. 291)

Financial planner
consejero financiero Experto que da consejos para la inversión a cambio de una cuota (p. 657)

Firm
empresa Unidad de negocio o empresa formada por un empresario que busca beneficio el cual combina recursos para producir bienes y servicios (p. 63)

Fiscal policy
política económica El uso del gobierno federal del impuesto y gasto público para influir la económia nacional (p. 72)

Fixed cost
costo fijo Cualquier costo de producción que es independiente de la producción de una empresa (p. 148)

Fixed exchange rate
taza de cambio fija Taza de cambio fija dentro de un estrecho rango de valores y mantenida por las continuas compras y ventas de la moneda de un banco central (p. 569)

Flexible exchange rate
taza de cambio flexible Taza de cambio determinada por las fuerzas de oferta y demanda sin que el gobierno intervenga (p. 569)

Food and Drug Administration (FDA)
Administración de Alimentos y Medicamentos Agencia federal que impone las normas para la producción y el mercadeo de alimentos y medicamentos en los Estados Unidos (p. 628)

Foreign aid
ayuda extranjera Una beca internacional o un prestamo hecho en términos favorables para promover desarrollo económico (p. 560)

Foreign exchange
cambio extranjero Dinero extranjero necesitado para hacer transacciones internacionales (p. 565)

Fractional reserve banking system
sistema bancario de reserva fraccional Solo una porción de los depositos del banco se respalda por las reservas (p. 489)

Full employment
empleo completo Ocurre cuando no hay nada de desempleo cíclico; relativamente bajo desempleo (p. 382)

G

General Agreement on Tariffs and Trade (GATT)
Acuerdo general a tarifas y comercio Un tratado internacional de reducción de tarifas adoptado en 1947 que resultó en una serie de "vueltas" negociadas con la meta a un comercio más libre (p. 551)

Good
bien Algo que se puede ver, sentir y tocar que requiere recursos escasos y satisface deseos humanos (p. 8)

Government budget
presupuesto del gobierno Un plan para desembolsos e ingresos del gobierno por un periodo específico, usualmente un año (p. 430)

Gross domestic product (GDP)
producto interno bruto (PIB) El valor del mercado de todos los bienes y servicios terminados y producidos en los Estados Unidos durante un periodo asignado, usualmente un año (p. 316)

Group of Seven (G-7)
el grupo de siete of G-7 Los siete mercados de economía industrial principales, incluyendo los Estados Unidos, el Reino Unido, Francia, Alemania, Italia, el Japón y el Canada (p. 362)

H

Household
hogar El más importante determinador de decisiones económicas, consistiendo en todos aquellos que viven bajo un techo (p. 62)

Human capital
capital humano El conocimiento, habilidad, y experiencia de una fuerza de trabajo aculumado (p. 354)

Human resources
recursos humanos La amplia categoría de esfuerzos humanos, tanto físicos como mentales, usada para producir bienes y servicios (p. 7)

I

Identity theft
robo de identidad Crimen en el cuál una persona usa fraudulentamente la identidad de otra persona para obtener crédito o tener acceso a cuentas financieras (p. 632)

Implementation lag
lapso de implementación El tiempo necesitado para ejecutar un cambio en póliza (p. 463)

Import substitution
sustitución de importaciones Una estrategia de desarrollo que enfatiza fabricación doméstica de productos que actualmente son importados (p. 558)

Income-assistance programs
programas de asistencia de ingresos Programas del gobierno que ofrecen dinero y ayuda en-especie a los pobres (p. 86)

Increase in demand
aumento en demanda Los consumidores mucho más quieren y pueden comprar el producto a cualquier precio (p. 168)

Increase in supply
aumento en oferta Los productores mucho más quieren y pueden ofrecer el producto a cualquier precio (p. 170)

Individual demand
demanda individual La exigencia de un consumidor individual (p. 105)

Industrial market countries
paises de mercado industrial Los mercados de economías avanzados del Oeste de Europa, Norteamérica, Australia, Nueva Zelanda y el Japón; también se llaman paises desarrollados (pp. 361, 548)

Industrial policy
póliza industrial La vista que el gobierno usando impuestos, subsidios y regulaciones debe nutrir las industrias y tecnologías del futuro, al darle a las industrias domésticas una ventaja sobre la competencia extranjera (p. 372)

Industrial Revolution
Revolución Industrial Desarrollo de producción de grande escala bajo un techo durante el siglo 18 (p. 64)

Inflation
inflación Un aumento en el nivel del precio general de la economía (p. 392)

Initial public offering (IPO)
oferta inicial pública La venta inicial de acciones de una corporación al público (p. 295)

Innovation
innovación El proceso de cambiar una invención a un producto comercializable (p. 225)

Insurance
seguro Protección que compras contra perdidas más alla de lo que puedas resistir (p. 661)

Interest rate
índice de interés Interés anual como porcentaje de la cantidad prestada o ahorrada (p. 285)

Investing
invertir Usando sus ahorros de manera que gana un ingreso para crear un retorno (p. 651)

Investment
inversión La compra de nuevas plantas, nuevo equipo, nuevos edificios, nuevas residencias, y adiciones netas al inventario (p. 318)

L

Labor
trabajo El esfuerzo físico y mental usado para producir bienes y servicios (p. 7)

Labor force
fuerza de trabajo Aquellos en la población adulta que están trabajando o buscando empleo (p. 384)

Labor force participation rate
índice de participación de la fuerza de trabajo El número en la fuerza laboral dividida por la población adulta (p. 385)

Labor productivity
productividad de trabajo Producción por unidad de trabajo; medida como el total de producción dividido por las horas de trabajo empleadas para producir ese producto (p. 354)

Labor union
sindicato de trabajo Un grupo de trabajadores que se juntan para obtener

más pago y mejores condiciones de trabajo al negociar un contrato de trabajo con sus empresarios (p. 270)

Laissez-faire
laissez-faire (política de mínima interferencia) La doctrina que el gobierno no debe intervenir en una economía de mercado más alla de lo mínimo requerido para mantener paz y derechos de propiedad (p. 398)

Law of comparative advantage
ley de ventaja comparativa El trabajador, empresa, región, o país con el costo de oportunidad más bajo de producir un producto debe especializarse en ese producto (p. 51)

Law of demand
la ley de demanda La cantidad de un bien exigido por periodo se relaciona a la inversa con su precio, otras constantes (p. 100)

Law of diminishing marginal utility
ley de utilidad marginal disminuida Entre más consuma una persona un bien por periodo, el aumento en utilidad total por consumir otra unidad más será más pequeño, otras cosas constantes (p. 101)

Law of diminishing returns
ley de rendimientos reducidos Al añadir más de un recurso variable a una cantidad específica de unos recursos fijos, el producto marginal eventualmente declina y puede ser negativo (p. 146)

Law of increasing opportunity cost
ley del aumento de la oportunidad del costo Cada aumento adicional de un bien requiere que la economía abandone sucesivamente aumentos más grandes del otro bien (p. 44)

Law of supply
ley de oferta La cantidad de un bien ofrecido en un periodo específico es usualmente relacionado en directo a su precio, otras cosas constantes (p. 130)

Leading economic indicators
indicadores principales de la economía Medidas que usualmente predicen, o llevan a recesiones o expansiones (p. 333)

Liability
responsabilidad legal La obligación legal de pagar cualquier deuda que el negocio encuentre (p. 231)

Liability
pasivo Una cantidad que se debe (p. 512)

Liability insurance
seguro de responsabilidad civil Protege contra las pérdidas debido a lesions que causas a otra persona o daño a la propiedad de otra persona (p. 662)

Limited liability company (LLC)
compañía con responsabilidad legal limitada Un negocio con responsabilidad legal limitada para algunos dueños, el sistema de impuestos sencillo de los ingresos de negocio, y no tiene restricciones de propietarios (p. 241)

Limited liability partnership (LLP)
sociedad colectiva con responsabilidad legal limitada Tal como una compañía con responsabilidad limitada pero más facilmente convertida de una sociedad colectiva que exista (p. 241)

Limited partnership
sociedad colectiva limitada Por lo menos un socio general dirige el negocio y carga con la responsabilidad legal personal sin limite; otros socios suministran capital financiero pero tienen responsabilidad legal limitada (p. 233)

Line of credit
linea de crédito Un arreglo con un banco por el cual un negocio puede prestar dinero necesitado rapidamente (p. 292)

Long run
a largo plazo Un periodo durante el cual todos los recursos se pueden variar (p. 146)

Long-run average cost curve
curva de promedio de largo plazo Una curva que indica el más mínimo promedio de costo de producción a cada índice de producción cuando el tamaño de una empresa se le permite variar (p. 152)

M

M1
M1 La más estrecha definición del abastecimiento de dinero; consiste en moneda (lo que incluye monedas) que el público no bancario tiene, depositos verificables, y cheques de viajero (p. 498)

M2
M2 Una definición más ancha del abastecimiento de dinero que consiste del M1 más los depósitos de ahorros, depósitos de denominación de poco tiempo, y cuentas de fondo común de inversiones (p. 500)

Marginal
marginal Incremental, adicional o extra; se refiere a un cambio en un variable de la economía, un cambio en el statu quo (p. 13)

Marginal cost
costo marginal El cambio en costo total resultando de una unidad de cambio en

la producción; el cambio del costo total divido por el cambio en producción (p. 149)

Marginal product
producto marginal El cambio en producto total resultando de un cambio de una unidad en un recurso en particular, otros recursos constantes (p. 146)

Marginal revenue
ingreso marginal El cambio en ingreso total al vender otra unidad de un bien (p. 150)

Marginal tax rate
índice de impuesto marginal El porcentaje de cada dólar adicional de ingresos que va a pagar el impuesto (p. 425)

Marginal utility
utilidad marginal El cambio en servicio total resultando en una unidad de cambio en el consumo de un bien (p. 101)

Market
mercado Los medios por los cuales la gente compra y vende algo (p. 15

Market demand
demanda del mercado La suma de las exigencias individuales de todos los consumidores en el mercado (p. 105)

Market economics
economía de mercado Estudio del comportamiento de la economía en mercados particulares, tal como el mercado de computadores o por trabajo no cualificado (p. 14)

Market economy
economía de mercado Describe el sistema de economía de los Estados Unidos, donde los mercados juegan un papel relativamente grande (p. 38)

Market for loans
mercado para prestamos El mercado que trae junto a los prestadores (los que exigen los prestamos) y los ahorradores (los que ofrecen los prestamos) para determinar el índice de interés del mercado (p. 287)

Market power
poder del mercado La habilidad de una empresa de subir su precio sin perder todos sus clientes a la competencia (p. 192)

Market structure
estructura de mercado Características importantes de un mercado tal como el número de compradores y vendedores, productos uniformes entre vendedores, facilidad de entrar al mercado, y formas de competencia (p. 190)

Maximizing political support
maximizar apoyo político Objetivo que guía el comportamiento de oficiales elegidos; comparable a maximizar un beneficio por empresas y maximizar servicios por hogar (p. 440)

Median income
ingreso medio El ingreso medio cuando un grupo de ingresos son clasificados del más bajo al más alto (p. 83)

Mediator
mediador Un observador imparcial que se lleva cuando las negociaciones de trabajo se quiebran, para sugerir como resolver las diferencias (p. 270)

Medium of exchange
medio de intercambio Cualquier cosa generalmente aceptada por todos los partidiarios a pago de bienes y servicios (p. 483)

Merchandise trade balance
ajuste de mercancia de comercio El valor de los bienes exportados por un país menos el valor de los bienes importados durante un perido asignado (p. 558)

Merger
fusión La combinación de dos o más empresas que forman una sola empresa (p. 207)

Minimum wage law
ley de salario mínimo Establece una cantidad minima que un empresario debe pagar a un trabajador por una hora de trabajo (p. 266)

Mixed economy
economía mixta Sistemas económicos que mezclan planificación central con mercados competitivos (p. 38)

Monetary policy
política monetaria Los esfuerzos del banco central por controlar el suministro de dinero para influir la economía nacional (p. 72)

Money
dinero Cualquier cosa que todo el mundo está dispuesto a aceptar a cambio de bienes y servicios (p. 53)

Money demand
demanda de dinero La relación entre cuánto dinero la gente desea mantener y la taza de interés (p. 519)

Money market accounts
cuentas de mercado monetario Cuentas bancarias que permiten a los consumidores depositar o retirar fondos cuando quieran por lo cual varian las tasas de intereses dia a dia (p. 647)

Money multiplier
multiplicador de dinero El múltiple por el cual el abastecimiento de dinero aumenta como resultado de un aumento en las reservas de exceso en el sistema bancario (p. 514)

Money supply
abastecimiento de dinero La reserva de dinero disponible en la economía en un tiempo asignado (p. 520)

Monopolistic competition
competencia monopolística Una estructura de mercado sin obstáculos para entrar y muchas empresas vendiendo productos que son lo suficientemente diferentes que la curva de demanda de cada empresa se inclina hacia abajo (p. 200)

Monopoly
monopolio Un solo proveedor de un producto sin sustitutos cercanos (p. 191)

Movement along a given demand curve
movimiento por una cierta curva de demanda Cambio en cantidad exigida resultando de un cambio en el precio de un bien, otras cosas constantes (p. 120)

Movement along a supply curve
movimiento por una curva de oferta determinada Cambio en cantidad ofrecida resultando de un cambio en el precio del bien, otras cosas constantes (p. 142)

Multilateral aid
ayuda multilateral Ayuda de desarrollo de una organización, tal como el Banco Mundial, que obtiene fondos de un grupo de paises (p. 560)

Multinational corporation (MNC)
corporación multinacional Una corporación grande que hace y vende sus productos en todo el mundo (p. 303)

Multiplier effect
efecto multiplicador Cualquier cambio en la póliza fiscal afecta la demanda total por más del cambio original en gastos o impuestos (p. 456)

Mutual fund
fondo mutual Una institución financiera que emite sus propias acciones y con sus ganancias compra un portofolio de valores (p. 654)

N

National economics
economía nacional Estudio del comportamiento de la economía en su totalidad, especialmente la economía nacional (p. 15)

Natural monopoly
monopolio natural Una empresa que puede servir al mercado entero a un costo por unidad más bajo de lo que pueden dos o más empresas (p. 71)

Natural rate of unemployment
desempleo a un índice natural El índice de desempleo cuando la economía está produciendo su nivel potencial de producto (p. 452)

Natural resources
recursos naturales Llamados "regalos de la naturaleza", usados para producir bienes y servicios; incluye recursos renovables y agotables (p. 7)

Negative externalities
externalidades negativas Biproductos de producción o consumo que imponen costos a terceros participantes que no son ni compradores ni vendedores (p. 78)

Net worth
valor neto Activos menos pasivos; también llamado como el capital del dueño (p. 512)

Nominal GDP
PIB nominal PIB basado en precios que predominan en el momento de la transacción; PIB del dólar actual (p. 325)

Nominal interest rate
índice de interés nominal El índice de interés expresado en dólares actuales como porcentaje de la cantidad prestada; el índice de interés en el acuerdo del prestamo (p. 395)

Not-for-profit organizations
organizaciones sin fin de lucro Grupos que no persiguen beneficio como su objetivo; estos se dedican a actividades de caridad, educación, humanitarias, culturales, profesionales u otras con razón social (p. 242)

O

Oligopoly
oligopolio Una estructura de mercado con un pequeño número de empresas cuyo comportamiento es interdependiente (p. 201)

Open-access goods
bien con acceso abierto Un bien que es un rival en el consumo pero costoso en la exclusión (p. 77)

Open-market operations
operaciones de mercado abierto Comprar y vender valores del gobierno de los Estados Unidos como forma de regular el abastecimiento de dinero (p. 494)

Opportunity cost
costo de oportunidad El valor de la mejor alternativa que se deja pasar por alguna actividad o algo elegida (p. 20)

P

Partnership
sociedad colectiva Dos o más personas acuerdan de contribuir recursos al negocio por una cantidad del beneficio (p. 232)

Payroll taxes
impuestos de nómina Impuestos deducidos de los sueldos para apoyar al Seguro Social y Medicare (p. 431)

Perfect competition
competencia perfecta Una estructura de mercado con muchos compradores y vendedores, bien informados, de un producto idéntico sin obstáculos para entrar (p. 190)

Personal finance
finanzas personales La manera en la cual planeas gastar o ahorrar tus ingresos (p. 611)

Personal insurance
seguro personal Protege en contra de la pérdida economica a causa de lesión, enfermedad, o la muerte inesperada de la persona asegurada (p. 663)

Physical capital
capital físico Las máquinas, los edificios, carreteras, aeropuertos, redes de comunicación, y otras creaciones fabricadas que se usan para producir bienes y servicios; también se llaman bienes capitales (p. 354)

Physical infrastructure
infraestructura física Transportación, comunicación, energía, agua, y sistemas de sanidad que el gobierno facilita y regula (p. 564)

Policy
póliza de seguros Contrato legal entre una persona asegurada y la compañia de seguros (p. 661)

Positive externalities
externalidades positivas Biproductos de consumo o producción que benefician a terceros participantes que no son ni compradores ni vendedores (p. 79)

Potential output
producción potencial La producción máxima de la economía sostenible a largo plazo (p. 452)

Price ceiling
precio máximo Un precio máximo legal alto del cual un producto no se puede vender; para tener impacto, un precio máximo debe fijarse abajo del precio de equilibrio (p. 178)

Price floor
precio mínimo Un precio mínimo legal más bajo del cual un producto no se puede vender; para tener impacto, un precio mínimo debe fijarse más alto del precio de equilibrio (p. 178)

Price level
nivel del precio Una medida de combinación que refleja los precios de los bienes y servicios de la economía en relación a precios en un año de base (p. 338)

Prime rate
índice de interés preferencial El interés que cobran los bancos por prestamos a sus más fiables prestatarios de negocio (p. 293)

Private corporation
corporación privada Propietario limitado a una sola persona o personas, a veces sólo miembros familiares; las acciones no son vendidas públicamente (p. 239)

Private goods
bien privado Un bien con dos características: (1) la cantidad consumida por una persona no está disponible para otros y (2) los que no pagan pueden ser facilmente excluidos (p. 76)

Private property rights
derechos de propiedad privada Reclamo legal que le garantiza a un dueño el derecho de usar un recurso o de cobrarle a otros por su uso (p. 69)

Privatization
privatización El proceso de cambiar empresas públicas a empresas privadas (p. 567)

Production possibilities frontier (PPF)
límites de posibilidades de producción Muestra las posibles combinaciones de los dos tipos de bienes que se pueden producir cuando recursos disponibles se emplean completa y eficientemente (p. 42)

Productive efficiency
eficiencia productiva Se logra cuando una empresa produce al costo más mínimo posible por unidad (p. 177)

Productive resources
recursos productivos Materias primas o factores de producción, usados para producir los bienes y servicios que quiere la gente (p. 6)

Productivity
productividad El valor de producción por cada unidad adicional de un recurso

(p. 252); la proporción de producción a una medida específica de producto; usualmente refleja un promedio, tal como medidas de áridos de grano por hectarea de terreno cultivado (p. 354)

Progressive taxation
impuestos progresivos El impuesto como porcentaje de ingresos aumenta al paso que los ingresos aumentan (p. 425)

Property insurance
seguro de propiedad Protege al asegurado de pérdidas a su propiedad (p. 662)

Proportional taxation
impuestos proporcionales El impuesto como porcentaje de ingresos se mantiene constante al paso que los ingresos aumentan; también llamado un impuesto fijo (p. 425)

Public goods
bien público Un bien que, al producirse, está disponible para que todos lo consuman, pero que el productor no puede excluir facilmente a los que no pagan (p. 76)

Publicly traded corporation
corporación publicamente comercializada Propiedad de varios accionistas; las acciones se pueden comprar y vender (p. 239)

Pure command economy
economía pura planificada centralmente Un sistema económico en el cual todos los recursos son del gobierno y la producción es coordinada por los planes centrales del gobierno (p. 37)

Pure market economy
economía de mercado puro Un sistema económico sin participación del gobierno para que las firmas privadas den cuenta de toda la producción (p. 35)

Q

Quantity demanded
cantidad exigida La cantidad exigida a un precio en particular (p. 104)

Quasi-public goods
bien cuasi-público Un bien que, al producirse, está disponible para todos, pero los que no pagan son facilmente excluidos (p. 76)

Quota
cuota Un límite legal de la cantidad de un producto en particular que se puede importar (p. 550)

R

Rational consumer choice
opción racional del consumidor Una opción de comprar o no comprar un producto para que su satisfacción sea la más grande posible por dólar gastado (p. 615)

Rational ignorance
ignorancia racional Una postura adoptada por votadores cuando ellos encuentran que el costo de comprender y votar sobre un tema en particular excede el beneficio esperado de hacerlo (p. 441)

Real GDP
verdadero PIB El total producto de una economía medido en dólares de constante poder de compra; PIB medido en términos de bienes y servicios producidos (p. 325)

Real interest rate
índice de interés real El índice de interés expresado en dólares de poder constante de comprar como porcentaje de la cantidad prestada; el índice de interés nominal menos el índice de inflación (p. 395)

Recession
recesión Un descenso en producción total que dura por lo menos dos trimestres consecutivos, o por lo menos seis meses (p. 330)

Recognition lag
lapso de reconocimiento El tiempo necesitado para identificar un problema macroeconómico (p. 463)

Regressive taxation
impuestos regresivos El impuesto como porcentaje de ingresos reduce al paso que los ingresos aumentan (p. 425)

Representative money
dinero representativo Notas bancarias que se intercambian por un productor específico, tal como el oro (p. 489)

Required reserve ratio
proporción de reserva requerida Una regulación federal que dicta el mínimo porcentaje de depósitos que cada banco debe mantener en reserva (p. 512)

Required reserves
reservas requeridas El equivalente del dólar que debe mantenerse en reserva; depósitos verificables multiplicado por la proporción de la reserva requerida (p. 512)

Resource complements
complementos de recursos Un recurso trabaja con el otro en producción; una reducción en el precio de uno aumenta la demanda por el otro (p. 256)

resource substitutes
sustitutos de recurso Un recurso puede remplazar otro en producción; un

aumento en el precio de un recurso aumenta la demanda por el otro (p. 255)

Retained earnings
ganancias retenidas La porción del beneficio de una corporación depués de impuestos que se reinvierte en la empresa (p. 295)

Return
retorno Ingresos ganados sobre fondos que no son gastados (p. 643)

Right-to-work law
ley de derecho de trabajo Ley estatal que dice que un trabajador en una compañía con sindicato no tiene que unirse al sindicato o pagar cuotas del sindicato para tener un trabajo allí (p. 270)

Rules of the game
reglas del juego Las instituciones formales e informales que dan incentivos de producción y promueven actividad económica; tal como las leyes, costumbres y convenciones (p. 356)

S

Saving
ahorro El acto de decidir no gastar el ingreso actual (p. 642)

Scarcity
escasez Una condición en todas las sociedades porque no hay suficientes recursos productivos para satisfacer los deseos ilimitados de la gente (p. 6)

S corporation
corporación S Obligación legal limitada que se combina con el sistema de impuestos sencillo de los ingresos del negocio; no puede tener más de 75 accionistas sin accionistas extranjeros (p. 240)

Secured loan
préstamo con garantía Préstamo en la cual se compromete alguna propiedad que pueda respaldar el reembolso del préstamo (p. 620)

Securities
seguridades Acciones y bonos de corporación (p. 295)

Service
servicio Algo no físico que requiere recursos escasos y satisface deseos humanos (p. 8)

Shift of a demand curve
cambio de una curva de demanda Aumento o reducción en demanda resultando de un cambio en uno de los determinantes de demanda fuera del precio del bien (p. 120)

Shift of a supply curve
cambio en una curva de oferta Aumento o rebaja en oferta resultando de un cambio en uno de los determinantes de oferta fuera del precio del bien (p. 142)

Short run
a corto plazo Un periodo durante el cual por lo menos uno de los recursos de la empresa es fijo (p. 146)

Shortage
escasez A un precio determinado, la cantidad por la cual la cantidad exigida excede la cantidad ofrecida; una escasez usualmente forza que el precio suba (p. 162)

Simple interest
interés simple Pagado al final del periodo, comunmente un año (p. 644)

Social insurance
seguro social Transferencias de efectivo para los retirados, los desempleados y otros con una historia de trabajo y un historial de contribuciones al programa (p. 86)

Soft budget constraint
restricción de presupuesto temporal En economías planeadas centralmente, la condición del presupuesto que se enfrenta por empresas estatales que son subvencionadas cuando pierden dinero (p. 567)

Sole proprietorship
negocio propio La más sencilla forma de organización de un negocio; una sola persona es dueña y dirige la empresa (p. 230)

Specialization
especialización Ocurre cuando trabajadores individuales enfocan en tasks individuales, permitiendo que cada uno sea más eficaz y productivo (p. 51)

Stagflation
estanflación Una caída o estancamiento, del producto de una nación acompañado por inflación en el nivel de precio (p. 401)

Standard of living
nivel de vida El nivel de una economía de prosperidad económica; mejor medida por el valor de bienes y servicios producidos por cápita (p. 354)

Strike
huelga El intento de un sindicato de trabajo de retener trabajo de una empresa (p. 270)

Sunk cost
costo perdido Un costo ya incurrido y no puede ser recuperado, sin importar de lo que se haga ahora (p. 22)

Supply
oferta Una relación mostrando las cantidades de un bien que productores quieren y pueden vender a varios precios durante un periodo específico, otras cosas constantes (p. 130)

Supply curve
curva de oferta Una curva o linea que muestra las cantidades o un bien en particular ofrecido a varios precios durante un periodo específico, otras cosas constantes (p. 130)

Supply of loans curve
curva de oferta de prestamos Una curva con inclinación hacia arriba mostrando la relación positiva entre el índice de interés y la cantidad de prestamos ofrecidos, otras cosas constantes (p. 287)

Supply-side economics
economía de oferta de lado Póliza de macroeconomía que enfoca en el cambio hacia la derecha de la curva de oferta total por medio de una reducción de impuesto u otros cambios que aumenten incentivos de producción (p. 402)

Surplus
excedente A un precio determinado, la cantidad por la cual la cantidad ofrecida excede la cantidad exigida; un excedente usualmente forza que el precio baje (p. 162)

T

Tariff
trifa Un impuesto a importaciones (p. 550)

Tastes
gustos Preferencias del consumidor; preferencias y aversiones en cosumo; se asume que son constantes por una cierta curva de demanda (p. 120)

Tax incidence
incidencia de impuesto Aquellos que soportan la carga del impuesto (p. 424)

Total cost
costo total Costo fijo más costo variable; el costo de todos los recursos usados por una empresa (p. 148)

Total product
producto total La producción total de una empresa (p. 146)

Total revenue
ingresos totales El precio multiplicado por la cantidad exigida a ese precio (p. 109)

Trade deficit
déficit de comercio La cantidad por la cual el valor de mercansias de importación excede el valor de mercancias de exportación durante un periodo asignado (p. 558)

Trade surplus
exceso de comercio La cantidad por la cual el valor de mercansias de exportación excede el valor de mercansias de importación durante un periodo asignado (p. 558)

Traditional economy
economía tradicional Sistema económico formado en su mayor parte por costumbre o religión (p. 39)

Transitional economy
economía en transición Sistema económico en proceso de cambio de planificación central a mercados competitivos (p. 39)

U

U.S. Agency for International Development (USAID)
Agencia de los Estados Unidos para Desarrollo Internacional La agencia federal que coordina ayuda extranjera al mundo en desarrollo (p. 560)

Underemployment
subempleo Trabajadores están sobre calificados para sus trabajos o trabajan menos horas que lo que prefieren (p. 383)

Unemployment benefits
beneficios de desempleo Transferencias de dinero a trabajadores desempleados que buscan trabajo activamente y que llenan otros requisitos (p. 388)

Unemployment rate
índice de desempleo El número buscando trabajo divido por el número en la fuerza de trabajo (p. 384)

Unsecured loan
préstamo sin garantía Préstamo en la cual el prestario no compromete ninguna propiedad especifica que pueda satisfacer el prestamo si los pagos no se hacen (p. 620)

Uruguay Round
La vuelta de Uruguay La más reciente y la más completa de las ocho negociaciones de comercio multilaterales después de la guerra bajo GATT; creó la (WTO) Organización Mundial de Comercio (OMC) (p. 551)

Utility
servicio La satisfacción de consumo; sensación del bienestar (p. 63)

V

Variable cost
costo variable Cualquier costo de producción que cambia al paso que cambia la producción (p. 148)

Vertical merger
fusión vertical Una empresa combina con otra de la cual compra aportaciones o a la cual vende productos, tal como una fusión entre un productor de acero y un productor de autos (p. 301)

W

Welfare reform
reforma de bienestar Una revisión del sistema de bienestar en 1996 que impuso un límite de bienestar de por vida de cinco años por recipiente y otras condiciones (p. 410)

World output
rendimiento mundial La combinación del producto interno bruto (PIB) de todas las naciones del mundo (p. 544)

World price
pecio mundial El precio al cual un bien se intercambia internacionalmente; determinado por la oferta mundial y la demanda mundial por el bien (p. 550)

World Trade Organization (WTO)
Organización Mundial de Comercio La fundación legal e institucional del sistema multilateral de comercio que siguió a GATT en 1995 (p. 552)

Index

A

Ability-to-pay tax principle, 423–424
Absolute advantage, 51
African Americans
  as entrepreneurs, 221
  job discrimination and, 265
  unemployment and, 386
Aggregate demand, 338
  decrease in, 398
  money supply changes and, 529
  stimulating, 399–400
Aggregate demand curve, 338–339, 452
Aggregate demand and supply (figure), 341
Aggregate expenditure, 319
Aggregate income, 320
Aggregate output, 338
Aggregate supply
  fiscal policy and, 464
  reduction in, 401
Aggregate supply curve, 340, 452, 529
Air fares
  equilibrium price and, 176
  shift of supply curve and, 166
Airline Deregulation Act (1978), 210
Algeria, climate and exports, 546
Alliance for Progress, 561
Allocation of goods and services, 34
Allocative efficiency, 177–178
Alternatives, choice among, 21–22
American Federation of Labor (AFL), 270
American Revolution, 55
American Trial Lawyers Association, 440
Analyze visuals, 174, 585
Annually balanced budget, 456
Annual percentage yield (APY), 644–645
Antitrust activity
  competitive trends in U.S. economy, 209–211
  defined, 207
  deregulation and, 210
  flexible policy, 207
  international trade and, 210
  mergers and, 207, 209
  Microsoft and, 209–210
  regulation of natural monopolies, 208
  technological change and, 210–211
Antitrust laws
  defined, 71
  introduction of, 302
AOL/Time Warner, 302
Applied research, 369
Arbitrageurs, 568
Arbitration, binding, 270
Argentina, hyperinflation and, 531, 532
Armenia, U.S. foreign aid to, 561
Articles of Confederation, 438
Articles of incorporation, 238
Asian Tigers, 597–598
Assembly line, 375
Asset, 512
Assumptions
  other-things-constant, 11, 101, 120, 142, 286
  simplifying, 11–12
ATM card, 499
Austin, Denise (Fitness Expert), 336
Australia
  as industrial market country, 361, 578
  inflation and, 532
  uranium and, 544
Automatic stabilizers, 461
Average cost, 152
Azuma, Julie (President, Different Roads to Learning), 115

B

Balanced budget, 460
Balance of payments, 557–563
  credits, 558
  current account and, 558
  debits, 558
  defined, 558
  double-entry bookkeeping, 558
  financial account and, 561–562
  flow measure of, 558
  merchandise trade, 558
  trade and, 588
  unilateral transfers, 559–560
Balance sheet, 512
Bank accounts
  amounts deposited into (figure), 644
  See also Checking accounts; Savings accounts
Bankruptcy, 13
Banks
  assets of, 512
  balance sheet, 512–513
  banking online, 515
  charter and, 512
  checks and, 489
  excess reserves and 513
  failure of, 345, 523
  the Fed and, 513
  as financial intermediaries, 291
  how they work, 511–516
  independence trend, 532
  liability of, 512
  limitations on money multiplier, 515
  loans and, 489
  as money multipliers, 513–515
  net worth of, 512
  notes and, 489
  operating, 512–513
  origins of banking, 489–492
  profiting from Internet, 290
  reserve accounts and, 512–513
  reserve requirements and money expansion, 514–515
Barnes & Noble, 205
Barriers to entry
  monopoly, 192–194
  oligopoly, 201–202
Barter, 53, 481–482
Base year, 338
Basic research, 369
Behavioral assumptions, 11
Belichick, Bill (Head Coach, New England Patriots), 261
Benefit, marginal, 13–14
Benefits-received tax principle, 423, 424
Benin, U.S. foreign aid to, 561
Bernanke, Ben (Chairman, Federal Reserve Board of Governors), 493, 527
Bilateral aid, 590
Bilateral funding, 590–591
Binding arbitration, 270
Birth rates, 598–599
Black market, 322–323, 596
Bland Allison Act (1878), 535
Board of Governors, Federal Reserve System, 72
Bolivia, hyperinflation and, 531
Bonds, 295
Brain drain, 589

Brazil
birth rate of, 579
coffee and, 544
as developing country, 578
as exporter to U.S., 547
Brin, Sergey (Google founder), 359
Britain
mergers and, 301
See also England; United Kingdom
British Petroleum (BP), 303
Budget, federal. *See* Federal budgets
Budget, personal
defined, 613
keep up to date, 614
personal income, 613
worksheets for, 613–614
Budget Enforcement Act, 451
Bureaus, 442
Bush, George H.W. (President), 402
Bush, George W. (President), 469
Business cycles, 72, 329–335
around the globe, 332–333
depression, 330
different impact on states, 331–332
economic indicators, 333
expansions, 330
figure, 330
Great Depression and, 331
history of, 331
long-term growth, 330–331
recession, 330
U.S. fluctuations, 330–333
Business growth, 299–305
corporate mergers and, 301
long-term. *See* Long-term growth
multinational corporations, 303–304
profit and, 300
Buy order, 653

C

California, Environmental Protection Agency (CEPA), 631
Cambodia, manufacturing in, 599
Canada
Canadians' travel to Florida, 544
exports and GDP of, 546
as industrial market country, 578
mergers and, 301
NAFTA and, 545
tariff on American corn, 591
U.S. citizens import prescription drugs from, 630
as U.S. trading partner, 547
Capacity
for credit, 622
excess, 201
Cape Verde, U.S. foreign aid to, 561
Capital
creditworthiness and, 622
as engine for economic growth, 356
human, 354, 598
as key resource, 544
physical, 318, 354
Capital deepening, 356
Capital goods
defined, 7–8
as exports, 547
opportunity cost of, 44
as physical capital, 354
production possibilities frontier and, 353
stock of, 45
U.S. imports of, 547
value of, 284–285
Capital resources, 7–8
circular-flow model, and, 16
Capital stock, 353
Carlos Slim, 577
Carnegie, Andrew, 245
Cartel, 202–203
Cash, benefits and costs of using, 619
Cash transfer programs, 87
Castellini, Bob (Cincinnati Reds), 229
Categorize information, 358
Cause and effect, 23, 135
Cease and desist order, 629
Central authority
environmental damage and, 38
waste of resources and, 38
Central bank, independence and inflation, 532
Central planning
economic questions and, 37
transition to market system, 597
Certificate of deposit (CD), 645
Ceteris paribus, 101
Character, 622
Charter, 238, 512
Check, 489
Checkable deposits, 499
Checking accounts
advantage of using, 646
fees and, 646
monthly maintenance charge, 646
opening and maintaining, 646
service charge, 646
Children
child labor, 52, 582, 599
health and, 82
malnutrition in developing countries, 579
mortality rates and 579
Chile
fruit from, 544
hyperinflation and, 532
sea bass from, 108
China
birth rate of, 579
command economy and, 351
entrepreneurs and, 226
as exporter to U.S., 547
market exchange rate and, 564
trade deficit with U.S., 557
U.S. trade deficit with, 569
as U.S. trading partner, 547
WTO and, 65
Choice
among alternatives, 21–22
consumer goods and capital goods, 45
need for, 46
opportunity cost and, 19–27
rational, 14
Cincinnati Reds, 229
Circular-flow model, 15–16
Civil Aeronautics Board, 210
Civil Rights Act (1964), 265
Civil war, poverty and, 599
Classical economists, 455
Clayton Act (1914), 207, 270
Clinton, Bill (President), 402
Cluster, 372
Coca-Cola, 303
Coercion, 442
Coinage Act, 535
Coins, 485–486
Collective bargaining, 270
College, opportunity cost and, 24–25
Collision insurance, 663
Collusion, 202
Colombia
coffee and, 544
hyperinflation and, 532
Command economies
price and profit in, 596
privatization, 597
pure, 37–40
Commerce Clause, in U.S. Constitution, 89
Commercial banks, 491
Commodity, 190
Commodity money, 483–484
Common stock, 652
Comparative advantage, 50–53
absolute advantage and, 51
exchange and, 52–53
international trade and, 544–546
labor and capital and, 544
law of, 51–52
specialization and, 52–54
technology and, 543
trade and, 546

Compare
corporations with sole proprietorships (figure), 238
marginal cost and marginal benefit, 13–14
tariff and quota, 558
Comparison shopping, 614
Competition
efficiency and, 177–178, 194
role of, 211
See also Perfect competition
Complementary goods, 118
Compound interest, 644
Comprehensive insurance, 663
Computers
effect on productivity, 364
hackers and, 464
personal, per 1,000 by country (figure), 599
per person worldwide, 598
productivity growth and, 366
Conclusions, draw, 89, 121, 244
Conglomerate merger, 301, 302
Congress of Industrial Organization (CIO), 270
Consumer
changes in expectations, 119
changes in tastes, 119–120
defined, 610
rights and responsibilities of, 631–632
using common sense, 632
willingness and ability to purchase, 110–111
Consumer choice, 145, 609–615
making wise decisions, 613–615
personal financial goals and, 610–612
rational, 615
Consumer cooperative, 242
Consumer goods, PPF and, 353
Consumer income, changes in, 117–118
Consumer loans, 619–620
Consumer payments, percentage distribution of, 618
Consumer price index (CPI)
market basket and, 327, 393
inflation and, 394
measurement of, 342
since 1913 (figure), 393
Consumer Product Safety Commission (CPSC), 70, 629–630
Consumer protection, 627–633
dealing with identity theft, 632
government efforts to protect consumers, 628–631
responsibility for your own, 631–632
Consumer Reports, 14, 612
Consumer sales credit, 619, 621
Consumer surplus, 180–181, 194
Consumption
defined, 317
time and, 286
Contractionary gap, 453
Convergence, 597–599
Cooperatives, 241–242
Copyright, 70
Corporate bonds, 655–656
Corporate borrowing, 295
Corporate finance, 294–296
Corporate growth, franchises and, 300
Corporate profits, growth and, 300
Corporate responsibility, 241
Corporate scandals, 302
Corporate stock, 294–295
defined, 651
dividends and, 295
family ownership by income level (figure), 651
initial pubic offering (IPO), 295
retained earnings and, 295
securities exchanges and, 295–296
types of, 652
Corporations
advantages and disadvantages, 239–340
annual sales by industry (figure), 239
articles of incorporation and, 238
defined, 238
high profits of, 394
income taxes, 431
as legal entity, 294
mergers and, 301
multinational, 303–304
private, 239
publicly traded, 239
stockholders and, 294
S type, 240
Cost
marginal, 13–14
product differentiation, 202
production and, 145–154
total, 130
transaction, 63
Cost of consumption, 120
Cost of production, 7
Cost-push inflation, 393
Costs in the long run
diseconomies of scale and, 152
economies of scale and, 152
long-run, average cost curve, 152
Costs in the short run, 148–151
fixed cost, 148
marginal cost and, 149
marginal cost curve and, 150
marginal revenue and, 150
shutting down and, 150–151
total cost, 148
variable costs, 148
Cottage industry system, 64
Cotton, U.S. Industrial Revolution and, 155
Council of Economic Advisors, 400
Counterfeiting, 499
CPI. *See* Consumer price index
CPSC. *See* Consumer Product Safety Commission
Craft unions, 270
Credit
benefits and costs of using, 619
critical thinking and, 626
defined, 291
line of, 292
positive credit history, 624
receiving and using, 621–623
repair damaged credit rating, 624
responsible use of, 617–625
three C's of, 622
wise use of, 624
Credit agencies, 622
Credit avoiding problems with, 624
Credit card debt, 617
Credit cards
fees and, 621
grace periods and, 621
history of, 635
interest rates and-, 621
issuers, 621
as short term loan 500–501
Credit file, assessment of, 623
Credit history, 622, 624
Credit ratings, 622
Credit score, 623–623
Creditworthy, 622
Crime, ATMs and, 486
Critical thinking, 556, 626
Crowding in, 470
Crowding out, 470
Currency
abroad, 498–499
appreciation, 567
checkable deposits, 499
in circulation, 498
counterfeiting of, 499
depreciation, 567
traveler's checks as, 499–500
Current account, 558
Current account balance, 560
Current dollars, 325
Curtis, Christopher (children's book author), 18
Cycle of poverty, 409–410
Cyclical unemployment, 382

D

Data, evaluate, 343
De Beers Consolidated Mines, 189
Debit card, 499–501
Debt
  federal debt. *See* Federal debt
  credit cards and, 617
Decision maker, rational, 13–14
Decision-making lag, 463, 533
Decision-making skills, 505
Deductible, 662
Deficit, trade, 558
Deflation, 325, 533, 535
Demand
  aggregate, 337–338
  changes in, 116–122
  for cotton, 123
  decrease in, 169
  derived, 252
  as elastic, 108
  elasticity of, 107–114. *See also* Elasticity of demand
  expressed as demand curve, 103–104
  expressed as demand schedule, 103–104
  figure, 112
  individual, 105–106
  as inelastic, 110
  law of, 100–103
  marginal revenue based on, 150
  market, 105–106
  quantity demanded vs. 104–105
  resource availability and, 130
  role of time in, 120–121
Demand curve, 99–106
  aggregate, 452
  changes in consumer expectation and, 119
  changes in consumer tastes and, 119–120
  changes in size or composition of population and, 119
  changes that can shift, 117–120
  defined, 104
  demand schedule and, 103–105
  determinants of demand, 117
  determinants of demand elasticity, 110–113
  increase in, 158
  law of demand and, 100–103
  monopolists' output and, 194
  movement along a given, 120
  relation between price and quantity demanded, 117
  shift in consumer tastes and, 120
  shifts of, 120, 168–169
Demand deposits, 491, 499
Demand for loans curve, 286
Demand for money (figure), 519
Demand for pizza (figure), 108
Demand-pull inflation, 392
Demand-side economics, 400
Demand and supply of resources, 251–259
  market demand for resources, 252–254
  nonwage determinants of labor demand, 255–257
  nonwage determinants of labor supply, 257–258
  product market, 252
Depository institutions, 490–492
  commercial banks, 490–491
  dual banking system, 491
  thrifts, 491
Depreciation, 324
Depression, 330
Deregulation, 210
Derived demand, 252
Determinants of demand, 117
Determinants of supply, 139–141
  changes in, 142
  changes in costs of resources and, 131–132
  changes in the number of suppliers, 141
  changes in the prices of other goods and, 140
  changes in producer expectations, 141
  changes in technology and, 140–141
  cost of production and, 139
  listed, 139
Developed countries. *See* Industrial market countries
Developing countries, 361
  child labor and, 582, 599
  defined, 578
  few entrepreneurs in, 582–583
  flow of money to, 587
  high birth rates in, 579–580
  illiteracy rates in, 578
  less education in, 581–582
  life expectancy in, 578–579
  low labor productivity in, 581
  physical infrastructures in, 594–595
  problems with exporting for, 593
  productivity and economic development, 581–583
  reliance on agriculture, 583
  technology outsourcing and, 582
  vicious cycle of low income and low productivity, 583
Digital property, theft of, 39
Diminishing marginal utility, 101–103
Discount rate, 493, 521
Discretionary fiscal policy, 461–462
Discrimination
  gender, 266
  job, 265
Diseconomies of scale, 152
Disequilibrium, 178–179
Dissaving, 641
Diversification, 291, 654
Dividends, 295
Doha Round, 552
Domestic content requirements, 550
Double counting, 316
Dow Jones Industrial Average, 10
Draw conclusions, 121, 244

E

Earned-income tax credit, 87
eBay, 164, 659
Economic choices, households and, 62
Economic growth
  defined, 45
  as reflected by shift in PPF, 46
Economic indicators, 333
  coincident indicators, 333–334
  lagging indicators, 333–334
  leading indicators, 333
Economic instability, 397–404
  the Great Depression and before, 398–399
  from the Great Depression to the early 1970s, 399
  growth, inflation, and deficits since 1980, 401–402
Economic problem, 5–9
Economic questions, 34–35
Economics, defined, 6
Economic systems
  defined, 34
  pure command economy, 37–40
  pure market economy, 35–36
Economic theories
  expressed, 13
  marginal analysis and, 13–14
  normative debates and, 13
Economic theory, 10–17
  defined, 11
  economic model, 11
  goal of, 11
  marginal analysis, 13–15
  market participants and, 15–16
  role of theory, 11–13
  simplifying assumptions, 11–12
Economic trends, useful measure of, 10
Economies of scale, 152
  as barrier to entry (figure), 193
  as benefits of trade, 545
  U.S. Steel and, 307
Economy
  defined, 316
  national, 316–317

underground, 322
Education
average years among workers (figure), 362
economic development and, 361, 581–582
goals, income and, 61
relationship between income and, 263
Effectiveness lag, 463, 533
Efficiency
competition and, 177–178, 194
defined, 42
monopoly and, 194–196
as PPF concept, 46
Elasticity, values of, 108–109
Elasticity of demand, 107–114
computing, 108–110
defined, 108
determinants of, 110–113
figure, 113
total revenue and, 109–110
Elasticity of supply, 133–135
categories of, 134
defined, 133
determinants of, 134–135
measurement of, 133
periods of adjustment and, 134–135
Electronic health care records, 69
Eminent domain, use of, 68
Employment Act of 1946, 400
Engelbreit, Mary (Artist and Entrepreneur), 166
England
glassmaking in, 27
Industrial Revolution and, 123
mercantile system, Jamestown and, 55
See also Britain; United Kingdom
Enron, 302
Entrepreneurs, 221–227
African Americans as, 221
China and, 226
creative change and, 222–223
defined, 7
financing the business, 223
firm and, 63–64
as human resource, 7
Industrial Revolution and, 64
invention, innovation, and, 225
managers and, 225–226
profit attracts competitions, 224
profit as reward for, 64–65
role of, 222–224
stockholders and, 226
venture capitalists and, 223
who isn't an entrepreneur?, 225
Environmental damage, central authority and, 38
Environmentalists, Arctic National Wildlife Refuge and, 79
Environmental Protection Agency (EPA), 630
Equal Employment Opportunity Commission, 265
Equilibrium
in pizza market (figure), 163
real GDP, 340
Equilibrium interest rate, 287
Equilibrium market, 162–163
Equilibrium point, 162
Equilibrium price, 162, 168
Equilibrium quantity, 162, 168
Equilibrium wage, 254
Ethics
framework for ethical decisions, 21
music industry and, 171
theft of digital property, 39
Euro, 532
exchange rate and, 565–566
as world currency, 568
Euro area, 565
European Central Bank, 532
European Union (EU)
adoption of uniform standards and, 550
defined, 545
Evaluate data, 343
Evolution of production (figure), 64
Excess capacity, 201
Excess reserves, 513
Exchange
barter and, 53
law of comparative advantage and, 52–53
money as means of, 53
Exchange rate, 565
Exhaustible resource, 7
Expansion, 330
Expansionary gap, 453
Expected marginal benefit, 13
Expenditure, aggregate, 319
Export promotion, 588–589
Exports, 210
corruption slows, 593
net, 318–319
U.S., 546–547
Externalities, 36, 77–79
negative, 77–79
positive, 79–80

F

Factors of production, 6
FDA. *See* U.S. Food and Drug Administration
FDIC. *See* Federal Deposit Insurance Corporation
Featherbedding, 272
Federal Aviation Administration (FAA), 630
Federal budgets, 430–431
annually balanced, 456
deficits, 400, 429
earmarks, 439
federal revenue and, 431
federal spending and, 430
revenue since 1960 (figure), 431
spending since 1960 (figure), 430
Federal Communications Commission (FCC), 630
Federal debt, 470–471
debt relative to the GDP, 471
economic impact of, 472
foreign ownership of debt, 472
gross debt vs. debt held by the public, 471
held by public as percent of GDP (figure), 471
interest payments on, 430
interest rates of, 472
we owe it to ourselves, 472
who bears the burden of?, 472
Federal deficits
budget deficits, 468
crowding in, 470
crowding out, 470
deficits and interest rates, 469–470
future generations and, 472
giant, 402
over the years, 468–469
surplus of 1996–2001, 469
surpluses and, as percentage of GDP (figure), 468
why is the budget usually a deficit?, 469
Federal Deposit Insurance Corporation (FDIC), 345
Federal Emergency Management Agency (FEMA), 104
Federal funds market, 522
Federal funds rate
aggressive rate cuts, 522–523
federal funds market and, 522
recent history of, 523–524
ups and downs since 1996 (figure), 524
why target this rate, 523
Federal Insurance Contributions Act (FICA), 431
Federal Open Market Committee (FOMC), 493–494, 522–524
Federal Reserve Board of Governors, 492–494
Federal Reserve note, 492
Federal Reserve System (the Fed), 72, 492–493
Board of Governors of, 72

branches of, 492
directing money policy, 493
as government protection, 630
independence of, 532
locations of district banks (figure), 493
organizational chart (figure), 494
origins of, 492–494
powers of, 492–493
Federal Trade Commission (FTC), 629
Federal Trade Commission Act, 207
FEMA. *See* Federal Emergency Management Agency
Female attorneys, cost of success, 19
Fertility rate, 579–580
Fiat money, 489–490
Financial account
defined, 561
record of, 562
statistical discrepancy of, 562
Financial capital, 223
Financial goals, strategies for achieving, 611–612
Financial intermediaries, 291
Financial plan, budget as, 613
Financial planner, 657
Firms
defined, 63
entrepreneur and, 63–64
evolution of, 63
for-profit, 442
industrial revolution and, 64–65
as market participants, 15
specialization and, 51
substitutions in production and, 253
as supplier, 252
supply curve of, 151
willingness and ability to hire resources, 253
Fiscal policy, 400, 460–465
aggregate supply and, 464
defined, 72
discretionary, 453, 462–465
evolution of, 451–458
potential output and, 453–457
rise of, 456
tools, 461
Fixed cost, 148, 150
Fixed exchange rates, 569
Fixed and variable resources, 146
Flexible exchange rates, 569
Flow, 484
Flow of money, 16
FOMC. *See* Federal Open Market Committee
Food for Peace program, 591
Forbes, 657
Ford, Henry, 375
Ford Motor Company, 303
Foreign aid, 590–591
Foreign exchange rates, 564–570
demand for, 566
determining, 567
euro and, 565–567
exchange rate systems, 569
market for, 565–567
supply of, 566–567
who buys foreign exchange?, 568
Foreign trade
export promotion, 588–589
import substitution, 588
international migration, 589
migration and, 588–589
Foreign workers, 355
Fortune, 657
Fractional reserve banking system, 489
France
laissez-faire policies in, 454
moves to outlaw iPods, 142
as U.S. trading partner, 547
Franchise, 300
Free riders, 76
Free-trade agreements, 551–553
Frictional unemployment, 382
FTC. *See* Federal Trade Commission
Full employment, 382
Future production, 45

G

Gasoline, supply chain of, 138
GDP. *See* Gross domestic product
GDP per capita, for selected countries (figure), 579
GDP price index, 327–328
General Agreement on Tariffs and Trade (GATT), 551, 601
General Electric, 303
General Motors, 303
General partnerships, 233
General Theory of Employment, Interest, and Money (Keynes), 399, 400
Germany
exports and GDP of, 546
hyperinflation and, 531
as U.S. trading partner, 547
as world's third largest economy, 533
Glassmaking in Jamestown, 27
Golden Age of Keynesian economics, 400
Gold standard, 569
Goods
changes in price of related, 118
defined, 8
durable, 317
exported, 210
financed by government, 443
imported, 210
inferior, 117–118
money price of, 120
nondurable, 317
normal, 117
private, 76
public. *See* Public goods
resources and, 8–9
scarcity of, 8–9
shortages, 129
time price of, 120
Goods and services
allocation of, 34
economic problem and, 8–9
final, 316
intermediate, 316
rationed, 37
Government
borrowing from households and, 426
as market participants, 15
role of, 80
role of, in safeguarding property, 69
U.S. economy and, 38
Government budget, 430
Government debt, 402. *See also* Federal debt
Government outlays as percentage of GDP (figure), 435
Government protection, 628–631
Government regulation
monopolies and, 208
public utilities and, 71
of quasi public goods, 77
See also Regulation of private sector
Grace, Arthur (Director, Community Development Financial Institutions), 504
Graphs
interpret, 48
pie, 198, 459
Great Depression
deflation and, 533
economic instability and, 398–399
economic slowdown and, 363–364
Federal Reserve System and, 492
government spending and, 430
Keynes and, 456–457
merger activity and, 302
New Deal and, 405
Green accounting, 324
Greenspan, Alan (former Fed Chairman), 527, 533
Gross domestic product (GDP)
aggregate expenditure and, 316, 319

aggregate income and, 320
annual percentage change in, 331
based on expenditure approach, 317–319
based on income approach, 319–320
calculating, 317–320
computer prices and, 326
consumption and, 317
current dollar and, 325
deflation and, 325
estimating 315–321
federal debt held by public as percent of, 471
government purchases and, 318
inflation and, 325
intangible investments and, 337
investment and, 318
limitations of estimation, 322–328
net exports and, 318–319
nominal, 325
nominal vs. real, 325
physical capital and, 318
real, 325. *See also* Real GDP
Gross investment, 324
Gross national income (GNI), 585
Gross product, 316
Group of Seven (G-7), 362
Gulf War, 402
Gutierrez, Carlos (U.S. Secretary of Commerce), 74

H

Hamilton, Alexander, 475
early banking in the United States and, 496
as first U.S. Treasury secretary, 571
Holland, flower auction in, 192
Honda, 303
Honduras
climate of, 544
U.S. foreign aid to, 561
Horizontal merger, 207
Hostile takeover, 302
Households
consumption by, 65
defined, 62
as demanders, 252
evolution of, 62–63
as free riders, 76
income mobility among, 84
marital status, poverty and, 85
as market participants, 15
median income of, 83–84
production and, 323
in U.S., poverty and (figure), 85
Human capital, 354
Human resources
circular-flow model, and, 16
defined, 7
Hurricane Isadore, 121
Hurricane Katrina, 104, 283, 460
Hybrid businesses, 240
Hyperinflation, 531, 533

I

Identity theft, 292
dealing with, 632
insurance against, 660
protect yourself from, 632–633
what to do in case of, 633
Identity verification products, 609
Illiteracy, in developing countries, 578
Immigration, 254
Implementation lag, 463, 533
Imports, 210
U.S., 547
Import substitution, 588
Income
aggregate, 320
educational goals and, 61
money, 101
poverty and, 83–88
predicting future, 613–614
real, 101
Income assistance
programs, 86–88. *See also* Welfare programs
unplanned results of, 408–410
Income effect, 101
Income redistribution, 87, 88
Income tax, 424
evolution of, 438
progressive, 421, 461
Incorporating, 238–239
Index number, 326, 338
Individual demand, 105–106
Individual supply, 132–133
Industrialization, 354
Industrial market countries, 361, 578
Industrial policy, 371–373
government involvement, 372
identifying industry clusters, 372
pitfalls of picking technological winners, 373
technological change and, 371–373
Industrial Revolution, 64–65
in England, 123
entrepreneur and, 64
large scale production and, 294
technological developments and, 64
in the United States, 155
Inferences, make, 298, 412
Inferior goods, 117–118
Inflation, 391–396
basics of, 392–393
calculator, 325
compare different eras, 391
expected vs. unexpected, 394–395
fiscal, 72
historical look at, 393
impact of, 394–395
interest rates and, 395
money circulation and, 72
money growth worldwide and (figure), 530
real GDP, 325
shifts of aggregate demand and supply curves and (figure), 392
sources of, 392–393
stagflation and, 401
transaction costs of unexpected, 395
types of, 392
Infrastructure, physical, 594–595
Initial public offering (IPO), 295
In-kind transfer programs, 87
Innovation, 225
Inputs
as productive resources, 146
productivity and, 353
Institutional investors, 296
Insurance, 660–665
buying, to protect yourself, 661–663
decisions to purchase, 664
defined, 661
premiums and past events, 661–662
primary types of, 662–663
rank your insurance needs, 664
your needs for, 663–664
Insurance fraud, 662
Insurance industry, income and expenditures (figure), 661
Intellectual property rights, 70
Interest, compound, 644–645
Interest rate(s)
default, 293
defined, 285
different types of loans (figure), 293
effect of lower, 521
effects of lower rate on real GDP and price level (figure), 521
equilibrium, 287
home mortgage rate, 293
increasing, 521–522
market, 287, 293
nominal, 395
other-things-constant assumption and, 286
prime rate, 293
real, 395

risk and, 293
why they differ, 293–294
International Monetary Fund, 590
International trade, 65–66
antitrust activity and, 210
imported and exported goods, 210
role in economic development, 588
Internet
commerce and, 44
computer chip and, 341
efficiency of resource market and, 46
library access to, 424
online banking, 290, 515
online degrees, 610
Interpret a graph, 48
Intrapreneur, 225
Investing, 650–658
corporate bonds, 655–656
defined, 651
investing in corporate stock, 651–652
investing to earn a return, 651–656
money management assistance, 656–657
mutual funds, costs of owning, 654–655
risk vs. return in buying stock, 652
why does the value of stock change?, 652
Investment, 318
Invisible hand, 36, 161
IPO. *See* Initial public offering
iPod, 142
Iraq, war in, 402, 460
Italy, research and development ranking, 369

J

Jamaica, coffee and, 544
Jamestown
English mercantile system and, 55
glassmaking in, 27
Japan
economic revival of, 319
economy improvements and, 436
exports and GDP of, 546
government outlays in, 435
as industrial market country, 361, 578
life expectancy in, 579
multinational corporations and, 303
research and development ranking, 369
as U.S. trading partner, 547
Jungle, The (Sinclair), 629

K

Kamen, Dean (Segway® founder), 225–226
Keynes, John Maynard, 405
Great Depression and, 456–457
theories of, 399, 400
Keynesian economics, 399–401
Kiplinger's Personal Finance magazine, 612, 657
Knight, Philip (Chairman of the Board, NIKE, Inc.), 466

L

Labor
defined, 7
division of, 53–54
economic growth and changes in quantity of, 356
inefficient use of, 582
as key resource, 544
marginal cost curve and, 150
nonwage determinants of demand for, 255–257
nonwage determinants of supply of, 257–258
productivity of. *See* Labor productivity
quantity supplied, 455
reduce supply of, 271
as resource, 149, 354
supply restrictions on, 271
Labor demand, effects of increasing (figure), 272
Labor force, 384
immigration and, 45
increases in, 45
more skilled, 45
participation rate, 385
Labor market, 262
for carpenters (figure), 253
Labor productivity, 354
capital and, 284–285
education of workers as source of, 361
as key to rising standard of living, 363
low productivity, 581
output per capita and, in the U.S., 362–365
technological changes and, 370–371
Labor-saving machinery, introduction of, 62
Labor supply, effects of reducing (figure), 272
Labor unions, 269–277
collective bargaining and, 270
history of, 270, 277
industrial unions, 270
membership in, 265
membership across states, 274
membership by gender and age, 273
organized labor and, 270
reasons for declining membership in, 274
right-to-work and, 270
strikes and, 270–271, 275
trends in membership, 273
union wages and employment, 271–273
World War II and, 270
Lagging economic indicators, index of, 334
Lags
decision-making, 463, 533
effectiveness, 463, 533
implementation, 463, 533
problems with, 463
recognition, 463, 533
Laissez-faire, 398–399, 455
Land fertility, 354
Large-scale factory production, Industrial Revolution and, 64
Latin America, standard of living in, 561
Law of comparative advantage
defined, 51
division of labor and, 53–54
exchange and, 52–53
gains from specialization, 52
opportunity cost and, 52
Law of demand, 100–103
Law of diminishing marginal utility, 101–102
Law of diminishing returns, 146
Law of increasing opportunity cost, 44, 46
Law of supply, 130–133
Leading economic indicators, index of, 333
Lending
predatory, 288
See also Loans
Liability
of banks, 512
defined, 231, 512
Liability insurance, 662–663
Liability protection, 664
Life insurance, 663, 664
Limited liability company (LLC), 241
Limited liability partnership (LLP), 241
Limited partnerships, 233
Lindner, Carl (Cincinnati Reds), 229
Line of credit, 292
Literacy, 361

Loans
administration costs of, 294
capital and, 286
collateral, 293
default of, 293
demand for, 286
duration of, 293
future consumption and, 286
market for, 286–287, 287
present consumption and, 286
secured, 620
supply of, 286–287
tax treatment of, 294
unsecured, 620
Local budgets, 433–434
Local spending and revenue (figure), 434
Long-run
costs in, 152
decision, 151
defined, 146
monetary policy in, 528–535
Long-run average cost curve, 152–153
Long-run supply curve, 529
Long-term growth, 330

M

Macroeconomics. *See* National economics; National economy
Madagascar, U.S. foreign aid to, 561
Make inferences, 298, 412
Make predictions, 526
Marginal, defined, 12, 13
Marginal analysis, 13–15
Marginal benefit, 13–14
Marginal cost
change in, 149
defined, 149
marginal benefit compared to, 13–14
production of, 131
Marginal cost curve, 150
Marginal product, 146–148
Marginal product curve, 147
Marginal revenue, 150, 152
Marginal tax rate, 425
Marginal utility
defined, 101
law of diminishing, 101–103
Marital status, poverty and, 85
Market(s)
characteristics of, 200
defined, 15
examples of, 190–191
for loans, 287
power of, 39
product, 15
source, 15
Market-clearing price, 162
Market competition
invisible hand of, 36, 161
natural monopolies and, 71
promotion of, 71
Market demand, 105–106
consumer surplus and, 180–181
for pizza (figure), 105
for public goods (figure), 423
for resources, 252–254
Market demand curve, perfect competition and, 194
Market economics, 14–15
Market economy
defined, 38
eminent domain and, 68
pure, 35–36
rules for, 69
transition from central planning, 597
Market efficiency
competition and, 177–178
disequilibrium and, 178–179
Market equilibrium, 162–163
firm's demand curve and (figure), 191
Market exchange, 70, 163–165
Adam Smith and, 163–164
increase in, transaction costs of, 395
Market interest rate, 287
money supply and, 520–522
Market power, 192
Market price, 36, 191
price controls and, 179
See also Price
Market structure, 190
anticompetitive, 207
comparison of (figure), 203
figure, 190
Market supply, 132–133
elasticity over time (figure), 135
Market supply curve, 132–133, 135, 141
Marshall Plan, 561
Mathematics
apply skills, 428
use to draw conclusions, 89
Maximizing political support, 440
Means-tested program, 87
Median income, 83
Mediator, 270
Medicaid
consumer surplus concept and, 181
federal budget and, 430, 431
as largest welfare program, 87
Medical insurance, 663, 664
Medicare
consumer surplus concept and, 181
federal budget and, 430, 431
as social insurance, 86
Medium of exchange, 483
Melton, Mark (Melton Franchise Systems Inc.), 306
Mergers
conglomerate, 301–302
corporate, 301
defined, 207
flexible merger policy, 207
horizontal, 207
nonhorizontal, 207
types, 301
vertical, 301–302
waves in the past century (figure), 301–302
Mexico
NAFTA and, 545
as U.S. trading partner, 547
Microeconomics. *See* Market economics; Market economy
Microsoft
monopoly and, 209
on trial, 211
Migration, 589
Minimum efficient scale, 152
Minimum legal price, 178
Minimum wage law, 266
coverage of, 266
effects of, 266–267
higher opportunity cost of school, 267
nonwage job features, 267
Mixed economy, 38–40
MNC. *See* Multinational corporation
Monetary policy, 493, 521
defined, 72
lags and, 533
as responsibility of the Fed, 72
Monetary policy in the long run, 528–535
changes in aggregate demand, 529–530
long-run effect of money supply changes, 529–53
long-run evidence, 530–531
money supply growth and inflation, 530–531
other issues, 531–533
production in the long run, 529
Monetary policy in the short run, 517–525
federal funds rate, 522–524
money demand, 518–519
Money
broad definition of (M2), 500–502
circulation, inflation and, 72
coins as, 485–486
cost of holding, 518–519
defined, 53, 482
demand and, 518–519

electronic, 502
evolution of (figure), 502
fiat, 489–490
functions of, 482–484
growth and inflation worldwide (figure), 530
as medium of exchange, 482–483, 518
narrow definition of (M1), 498
origins of, 481–487
problem of too much or too little, 528
representative, 489
as store of value, 483–484, 518
supply of, 514
unilateral transfers of, 559–560
as unit of account, 483
Money aggregates, 498
Money demand, 519
Money demand curve, 519
Money magazine, 612, 657
Money income, 101
Money management assistance, 656–657
Money market accounts, 646–647
Money market mutual fund accounts, 500
Money multiplier, 514–515
Money supply
defined, 520
increase in, 520–521, 529
long-run effect of changes in, 529–530
market interest rate and, 520–522
measurement of (figure), 501
Mongolia, exports of, 134
Monopolist, 71, 203
Monopolistic competition, 200–201
Monopoly, 71, 191–192
antitrust laws and, 71
barriers to entry and, 192–194
consumer surplus and (figure), 195
De Beers as, 189
deregulation and, 206
as harmful to social welfare, 71
market power and, 192
Microsoft and, 209
natural, 71, 192–193, 208
positive aspects of, 195–196
other problems with, 195
perfect competition vs., 194–195
Monopoly efficiency, and, 194–196
Moore, Michael ("Roger and Me"), 223
Motley Fool, 650
Movement along a demand curve, 120
Movement along a supply curve, 142
Multilateral aid, 590
Multinational corporation (MNC), 303
examples, 303
Ford Motor Company, 303
Japan and, 303
problems of, 303–304
Western Europe and, 303
Multiplier effect, 456
Mutual funds, 296
costs of owning, 654–655
defined, 654
no load, 654
See also Money market mutual fund accounts

N

NAFTA. *See* North American Free Trade Agreement
NASDAQ, 295–296, 653–654
National Banking Act of 1863, 492
National banks, 492
National Bureau of Economic Research (NBER), 330–332
National debt, 467, 475
National economics, 15, 316–317
National income accounts, 316, 325
Nationalism, 597
National Wool Growers Association, 440
Natural monopoly, 71
Natural rate of unemployment, 452
Natural resources, 7
circular-flow model, and, 16
depletion of, 324
exhaustible resource, 7
renewable resource, 7
Natural unemployment rate, 462–463
NCEE standards
allocation of goods and services, 34
cost/benefit analysis for government programs, 443
effects of an increase in demand, 168
fiscal policy and potential output, 452
gains from trade, 569
growth, 224, 353, 370, 598
macroeconomy, 340
marginal cost/benefit, 14
profit and entrepreneurs, 130
role of competition, 211
role of economic institutions, 490
role of government, 80
role of interest rates, market loans and, 287
role of money, 518
role of resources in determining income, 83, 252
scarcity, 6
specialization and trade, 546
unemployment, 384
Nestlé, 303
Net domestic product, 324
Net exports, 318–319
Netherlands
exports and GDP of, 546
as U.S. trading partner, 547
Net investment, 324
Net unilateral transfers, 560
New Deal, the, 405
New York Stock Exchange (NYSE), 295, 653
New Zealand
as industrial market country, 361, 578
inflation and, 532
Nicaragua, U.S. foreign aid to, 561
Nilekani, Nandan (CEO, Infosys Technologies Ltd.), 555
Nominal GDP, 325
Nominal interest rate, 395
Nominal wage, 394–395
Nonhorizontal mergers, 207
Nonwage determinants of labor demand
demand for final product, 255
price of other resources, 255–256
technology, 256–257
Nonwage determinants of labor supply
tastes for work, 258
worker wealth and, 257–258
working conditions and, 258
Normal goods, 117
Normal production capacity, 454
Normative economic statements, 13
North America, industrial market countries in, 578
North American Free Trade Agreement (NAFTA), 545, 553, 601
North American fur trade, 213
Not-for-profit organizations, 242
NYSE. *See* New York Stock Exchange

O

Oil
demand for, 107
Saudi Arabia and, 544
unconventional sources, 161
Oligopoly
automakers and, 199
barriers to entry and, 201–202
cartels and, 202
collusion and, 202
differentiated, 201
economies of scale and, 201–202
high cost of entry and, 202

product differentiation costs and, 202
undifferentiated, 201
when oligopolists collude, 202–203
when oligopolists compete, 203
Online banking, 515
Online business, 403
Online degree programs, 610
OPEC. *See* Organization of Petroleum Exporting Countries
Open access goods, 76–77
Open-market operation, 494
Opportunity cost
of capital goods, 44
choice and, 19–27
of college, 24–25
defined, 20
demonstrated, 46
estimate, 20
female attorneys and, 19
law of comparative advantage and, 52
law of increasing, 44
of school, 267
as varying, 20
Organization of Petroleum Exporting Countries (OPEC), 180, 364
Other-things-constant assumption, 11, 101
change in price and, 142
college choice and, 24–25
interest rates and, 286
time benefit and, 120
Output
decline and recession, 332
fiscal policy and potential, 452–454
goods and services as, 146
productivity and, 353
profit-maximizing level of, 150
value in current dollars, 325
world, 544
Output per capita, 364–365
Overhead. *See* Fixed cost

P

PAC. *See* Political action committee
Packard, Susan (Scripps Networks), 49
Page, Larry (Google founder), 359
Paper money, 486
Partnerships, 232–235
advantages of, 233–234
disadvantages of, 234–235
distribution based on annual sales and industry, 232
types of, 233
Patent laws, 70
Payroll taxes, 431
PC magazine, 612
Peak, 330
Pecuniary, 483
Percentages, working with, 260
Perfect competition, 190–191
market demand curve and, 194–195
monopoly vs., 194–195
Persian Gulf War, 560
Personal finance, 611
Personal insurance, 663
Physical capital, 318, 354
Physical infrastructure, 594–595
Pie graphs, 198, 459
Policy, 661
Political action committee (PAC), 440
Political contributions, minors and, 441
Political support, maximizing, 440
Pollution taxes, 425
Popular Mechanics magazine, 612
Popular Science magazine, 612
Positive economic statements, 13
Potential output, 452
Poverty, 406–412
civil war and, 599
cycle of, 409–410
economy and, 407–408
income assistance, unplanned results of, 408–410
jobs and, 407
low income, low productivity and, 583
marital status and, 85
programs to help the poor, 86–87
as relative term, 85
society's response to, 86
unmarried motherhood and, 407–408
Poverty rate, 407
biggest decline in, 84–85
official, 84–85
in U.S., types of households and (figure), 85
Poverty threshold, 360
PPF. *See* Production possibilities frontier
Predatory lending, 288
Predictions, make, 526
Preferred stock, 652
Present consumption, 45
Price
change in relative, 131
as determined by market demand and supply, 190
market, 191
market-clearing, 162
minimal accepted, 151
minimum legal, 178
product allocation and, 596
quantity, and market equilibrium, 161–165
See also Market price
Price ceiling, 178
Price control, pharmaceutical companies and, 196
Price floor, 178, 179
Price index, 326–327
consumer price index (CPI), 327
example of (figure), 326
GDP price index, 327–328
Price level, 338
Prime interest rate, 293
Private corporation, 239
Private firms, 36
Private goods, 76
Private markets, 35, 36
Private sector
competition and, 442
regulation and, 38, 68–73
See also U.S. private sector
Privatization, 39, 597
Producer cooperative, 242
Producer expectations, changes in, 141
Product differentiation, 200–201
costs of, 201
location, 200
physical differences, 200
product image, 200
services, 200
Product differentiation cost, 202
Product efficiency, 177
Production
corruption as hindrance, 596
cost of, 7
evolution of (figure), 64
large scale, 294
marginal cost of, 131
real changes in, 325
time and, 284–285
Production and cost, 145–154
costs in the long run, 152
costs in the short run, 148–151
production in the short run, 146–147
Production possibilities frontier (PPF), 41–49
capital deepening and, 356
economic growth and, 352–353
efficiency and, 42–45, 46
expansion of, 45
figure, 42, 352
human and physical capital, 354
increasing production of capital goods and, 43
inefficient and unattainable production and, 43
lessons from, 46
model of, 42–43
productivity and, 353–354, 356

rules of the game, 356
shape of, 43–44
shifts of, 45
simplifying assumptions, 42
technological changes and, 46
Production in the short run
fixed and variable resources, 146
increasing returns, 146
law of diminishing returns and, 146
marginal product curve, 147
Productive resources, 6–8
Productivity
capital deepening and, 356
defined, 252, 354
economic growth and, 353–354
training and, 263
Productivity growth
computers and, 366
power of, 364
Product markets, 15
Products, flow of, 16
Profit
competitors attracted by, 224
corporate, 300
as entrepreneur's incentive, 7
as entrepreneur's reward, 64–65
lure of, 130
role in law of supply, 130
total cost and, 130
Progressive income tax, 461
Progressive taxation, 425
Property insurance, 662
Property rights
defined, 69
difficulty in enforcing, 35–36
Property taxes, 424
Pro-poor tourism, 411
Proportional taxation, 425
Public choice, economics of, 439–444
bureau vs. firm, 442–443
customer feedback, 442
private vs. public production, 443
product prices, 442
representative democracy, 440–441
voluntary exchange vs. coercion, 442
voter incentives, 442–443
Public goods
categories of (figure), 78
defined, 76
demand for, 422
optimal quantity of, 422
quasi-, 76
taxation and, 426
Publicly traded corporation, 239
Public utilities, 71
Pure command economy, 37
Pure Food and Drug Act, 629
Pure market economy, 35–36

Q

Quantity demanded, 162
defined, 104
higher price reduces, 110
oil prices and, 107
percentage increase in, 110
relationship between price and, 104–105, 117
Quantity supplied, excess, 162
Quantity vs. supply, 132
Quasi-public goods, 76, 77
Quimby, Roxanne (Burt's Bees), 228
Quota, 550, 591

R

Rational, defined, 12
Rational consumer choice, 615
Rational decision makers, 14
Rational ignorance, 441
Rationality, 12
Rational self-interest, 12
Raw materials, trade in, 66
Reagan, Ronald (President), 402
Real GDP, 325, 333, 338
annual percentage changes in, real investment and (figure), 470
growth rates in (figure), 332
prices since 1929, 340–342
U.S., and price level (figure), 342
Real GDP per capita, 341, 342
Real income, 101
Real interest rate, 395
Real output per worker hour, 362, 363
Real wage, 394
Recession, 330
Gulf War and, 402
leading indicators and, 333
output decline and, 332
unemployment and, 386
unemployment benefits and, 388
Reciprocal Trade Agreement Act of 1934, 601
Recognition lag, 463, 533
Region, specialization and, 51
Regressive taxation, 425
Regulation of private sector, 68–73
growth and stability of U.S. economy, 72
intellectual property rights and, 70
measurement and safety and, 70
rules for a market economy, 69
See also Government regulation
Relative scarcity, 164
Renewable resource, 7
Representative democracy
maximizing political support, 440
rational ignorance and, 441
role of special interest in, 440
Representative money, 489
Required reserves, 512
Research and development, 369
Reserves, 492
Resource availability
changes in, 45
consumer demand and, 130
Resources
allocation of scarce, 610
changes in, determinants of supply and, 131–132
command ownership of, 37
complements, 256
control of, 193–194
decision-making process and, 34
demand and supply of, 251–259
derived demand for, 252
firm's willingness and ability to hire, 253
fixed and variable, 146
flow of, 16
improvements in quality, 356
labor as, 149
market demand for, 252–254
PPF and quality of, 352
productive, 7–8
substitutes, 255
supply and demand for, 16
wasted by central authority, 38
Rest of the world
international trade and, 65–66
as market participant, 15
U.S. household consumption and, 65
Retained earnings, 295
Return, on savings, 643
Revenue, 7
Riggio, Leonard, (CEO, Barnes & Noble), 205
Right-to-work law, 270
Right-to-work states, 271, 275
Risk
ability to bear, 577
in buying stock, 652
collateral and, 293
default, 293
diversification and, 291
Rocky Mountain Fur Company, 183
"Roger and Me" (Michael Moore), 223
Roosevelt, Franklin D. (President), 405
Rules of the game
converging economies and, 597–599
economies in transition, 596–597

formal, 595
informal, 595
productivity, growth and, 356
reasons for optimism, 599
as vital for economic development, 595

S

Safety net, 82–90
Salary, origin of term, 483
Saudi Arabia, oil and, 544
Saving, 641–648
checking accounts, 646
defined, 642
money market accounts and, 647
savings plan, 642
storing your savings, 642–643
time deposits, 645–646
types of bank accounts, 643–644
Savings accounts, 644–645
Savings bonds, 649
Savings deposits, 500
Scarcity
defined, 6
degree of, 100
as economic problem, 22
as PPF concept, 46
relative, 164
Schnatter, John (Founder, Papa John's Pizza), 144
School, higher opportunity cost of, 267
Schultz, Howard (Chairman, Starbucks Corporation), 616
S corporation, 240
Seasonal unemployment, 382
Sebelius, Kathleen (Governor of Kansas), 445
Secured loans, 620
Securities
liquidity of, 296
ownership of, 295
secondary market for, 296
stocks and bonds as, 295
Securities exchange, 295
institutional investors, and, 296
mutual funds and, 296
SEC. *See* U.S. Securities and, Exchange Commission
Segway®, Dean Kamen and, 225–226
Seigniorage, 486
Self-interest, rational, 12
Sell order, 653
Services
defined, 8
examples of, 317
as financed by government, 443
as intangible products, 559
productive resources and, 8–9
Shares of stock, 238
Shell Oil, 303
Sherman Antitrust Act, 207
Sherman Silver Purchase Act (1890), 535
Shift of a demand curve, 120, 169
Shift of a supply curve, 142, 169–171
Shortage, 162
Short run
costs in, 148–151. *See also* Costs in the short run
defined, 146, 151
losses and shutting down, 150–151
monetary policy in, 517–525
production in, 146–147
Sierra Leone
computers per person in, 598
as developing country, 578
life expectancy in, 579
Sinclair, Upton, *The Jungle*, 629
Sin taxes, 425
Smart cards, 491
Smith, Adam, 55
invisible hand concept and, 71, 163–164
The Wealth of Nations (1776), 399
Smoking, teenage, 113
Smoot-Hawley Act, 571
Social insurance, 86
Socialist market economy, 33
Social Security
federal budget and, 430, 431
as federal retirement program, 471
as social insurance program, 86
Soft budget constraint, 597
Software for business startups, 235
Software piracy, 372
Sole proprietorships, 230–232
advantages of, 231
disadvantages of, 231–232
distribution based on annual sales and by industry (figure), 230
Sony, 303
Source markets, 15
South Africa, diamonds and, 544
South Korea, as U.S. trading partner, 547
Soviet Union
break up of, 302
collapse of, 596
Special interest
government regulation of monopolies and, 208
political action committees, 440
Specialization, 51–54
Specialized care, medical gains from, 50
Speculators, 568
Spending, emergency, 451
Stagflation, 393, 400–401, 462
Stamp Act, 438
Standard of living
education and economic development, 361–362
GDP and, 323
in industrial and developing economies, 361
in Latin America, 561
output per capita as measure of, 365
in poorest third of the world, 598
productivity and, 354
U.S. labor productivity and output per capita, 362–365
State banks, 491
State budgets, 432–433
State and local consumer protection, 631
State spending and revenue (figure), 432
Statistical discrepancy, 562
Stock
buying and selling shares of, 652–653
buy order, 653
create your stock portfolio, 654
diversification of, 654
dividends and, 295
flow vs., 484
initial public offering of, 295
sell order, 653
shares of, 238
Stock exchanges, 653–654
Stockholders, 294
Store of value, 484
Strike
labor unions and, 275
as source of union power, 270–271
Structural unemployment, 382
Substitute goods, 110–112, 118
Substitution effect, price change and, 101
Supernotes, 488
Supplemental Security Income (SSI), 87
Supply, 130–131
aggregate, 340
change in relative price, 131
decrease in, 171
determinants of, 139–141
elasticity of, 133–135. *See also* Elasticity of supply
increase in, 170–171
individual supply and market supply, 132–133
interruption of, 41
law of, 130–133

more able to supply, 131–132
more willing to supply, 131
quantity vs., 132
relative to other prices, 131
Supply curve, 129–137
aggregate, 452
as inelastic, 134
movement along, 142
shifts of, 138–144, 166
Supply of loans curve, 287
Supply schedule, 130–131
Supply-side economics, 402
Surplus
defined, 162
trade, 558
Sweden, exports and GDP of, 546
Switzerland, exports and GDP of, 546

T

Taft-Hartley Act, 270
Taiwan, as U.S. trading partner, 547
TANF. *See* Temporary Assistance for Needy Families
Tariffs
defined, 550
revenue from, as percentage of U.S. imports, 552
trade and, 571, 601
trade restrictions and, 591
U.S.-imposed, on steel imports, 549
Tastes, 120
Taxation
progressive, 425
proportional, 425
regressive, 425
Taxes
income, 424
marginal rate, 425
payroll, 431
pollution, 425
property, 424
rates on personal income (figure), 426
as revenue, 424–426
sin, 425
user fees as, 425
Tax incidence, 424
Tax policy, analysis of, 397
Tax principles, 422–424
ability-to-pay, 423–424
benefits-received, 423
Taylor, Jeff (Founder, Monster.com), 390
Technological change
as competitive trend in U.S. economy, 210–211
employment levels and, 371
industrial policy and, 371–373
Industrial Revolution and, 64
labor productivity and, 370–371
research and development and, 369–370
Technology
breakthroughs and commercial possibilities, 369
changes in, 256
changes in determinants of supply and, 140–141
changes in determinants of demand and, 116
flat world and, 368
future and, 371
human capital and, 598
improvements, 256–257
outsourcing and, 582
PPF and level of, 352
productivity and, 364
Teenage smoking, elasticity of demand and, 113
Telecommunicating, 11
Temporary Assistance for Needy Families (TANF), 87
Term life insurance, 664
Terrorist attacks, 435
Theories
economic, explanation of, 12–13
everybody uses, 12
role of, 13
Threshold Program, 561
Thrifts, 491
Time
consumption and, 286
opportunity cost and, 21–22
production and, 284–285
role in demand, 120–121
Time deposits, 500
Time Warner, merger with AOL, 302
Token money, 486
Total cost, 130
break even and, 130
defined, 148
Total product, 146
Total revenue, 109–110
Tourism, pro-poor, 411
Toyota, 303
Trade
benefits of, 543–548
corruption as hindrance to, 596
differences in tastes and, 545–546
productive economies and, 354
raw materials and, 66
tariffs and, 601
Trade balance
defined, 558
factors of, 558
Trade barriers. *See* Trade restrictions
Trade deficit
defined 558
U.S., by county or region (figure), 560
Trademark, 70
Trade restrictions, 550–551
other, 550–551
problems with, 551
reduction in, 599
tariffs and quotas compared, 550
Trade rounds, 551
Trade surplus, 558
Trade war, 551
Traditional economy, 40
Transaction costs, 63, 165
Transitional economy, 39
Traveler's checks
as currency, 499–500
electronic 497
Trough, 330

U

U.S. Agency for International Development (USAID), 590
U.S. Bureau of Printing and Engraving, 492
U.S. per capita output, 361
U.S. Constitution, 475
the Commerce Clause and, 89
Sixteenth Amendment, 431, 438
U.S. Department of Agriculture, 70, 440
U.S. Department of Environmental Conservation (DEC), 630–631
U.S. Department of Homeland Security, 104, 631
U.S. dollar, as world currency, 498
U.S. economy
competitive trends in, 209–211
fiscal policy and, 72
growth and stability of, 72
monetary policy and, 72
U.S. Food and Drug Administration (FDA), 70, 629, 630
U.S. population
composition of adult (figure), 385
noninstitutional adult, 384
U.S. poverty rates
by family type (figure), 407
unemployment rates and (figure), 408
U.S. private sector, 61–66
firms and, 63–65
rest of the world and, 65–66
trade in raw materials and, 66
See also Private sector
U.S. Securities and Exchange Commission (SEC), 295, 630
U.S. service sectors, 251
U.S. Surgeon General, 440
U.S. Treasury, 492
U.S. Treasury securities, 471

Umbrella policy, 664
Underemployment, 383
Underground economy, 322, 323
Unemployment, 381–389
  among various groups (figure), 387
  benefits and, 387–388
  changes in rate of, 386
  cost and measure of, 384–387
  natural rate of, 452
  problems with official estimates, 383–384
  teenagers and, 386
  types of, 382–384
  for various groups, 386–387
Unemployment insurance, 461
Unemployment rate, 384–385
  calculating natural, 462–463
Unilateral transfers, 559–560
Unionization, in global environment, 269
Union membership
  IT workers and, 276
  for men and women by age (figure), 274
  See also Labor unions
Unit of account, 483
United Kingdom
  exports and GDP of, 546
  as industrial market country, 578
  as U.S. trading partner, 547
  See also Britain; England
United States
  birth rate in, 579
  as bread basket of world, 544
  cartels and collusion in, 202
  computers per person in, 598
  current account deficit and, 561
  dual banking system and, 492
  exports from, 546–547, 550
  exports and imports, composition of (figure), 547
  exports and imports relative to GDP (figure), 559
  first bank of, 496
  Food for Peace program and, 591
  foreign aid accountability and, 561
  government in economy of, 38
  government outlays in, 435
  history of money supply growth and inflation in, 530
  imports to, 547
  Industrial Revolution and, 155
  labor productivity growth (figure), 364
  as mixed economy, 38
  near poor in, 406
  NAFTA and, 545
  output per capita, international comparisons, 365
  output per capita, labor productivity and, 362–365
  patents awarded for inventions by year (figure), 225
  production as percentage of consumption (figure), 66
  real GDP per capita since 1959 (figure), 365
  research and development ranking, 369
  spending components as percentages of GDP (figure), 317
  trade deficit with China, 557
  unemployment rate since 1900 (figure), 386
  union membership for men and women by age in (figure), 274
  value of business structures and equipment in (figure), 285
United States Army Corp of Engineers, 75
United States Steel, 307
Unit elastic, 108–109
Unsecured loans, 620
Upper Mississippi River System Environmental Management Program, 631
Uruguay Round, 551–552, 599
User fees, 425
Utility, 63

V

Value, money as store of, 483–484
Value added, 320
Vanutu, U.S. foreign aid to, 561
Variable cost, 148, 150
Venezuela, as U.S. trading partner, 547
Venture capitalists, 223
Vertical merger, 301, 302
Virginia Company, 27
Visuals, analyze, 174, 585
Voluntary exchange, 442

W

Wage
  average hourly by occupation (figure), 263
  for human resources, 7
Wage determination
  differences in ability and, 264–265
  differences in risk and, 265
  geographic differences and, 265
  job discrimination and, 265
  minimum wage, 266–267
  relationship between income and education, 263
  union membership, 265
Wall Street Journal, 657
Walton, Sam, 97
Washington, George (President), 475
Wealth of Nations, The (Adam Smith), 399
Welfare
  federal budget and, 430, 431
  reforms of, 87–88, 410
  See also Income-assistance programs
Western Europe, industrial market countries in, 361, 578
Whirlpool, 303
Whitman, Meg (CEO, eBay), 659
Whole life insurance, 664
Woods, Tiger, 25
Worker's compensation, 153
WorldCom, 302
World output, 544
World price, 550
World Trade Organization (WTO), 65, 552, 599
World War II
  aggregate demand and, 400
  budget deficits and, 469
  businesses and, 454
  change in economic thinking and, 430
  cost of, 471
  depression and, 330
  economic slowdown and, 363
  GATT and, 601
  Great Depression and, 331
  labor unions and, 270
  merger activity and, 302
  periods of inflation and deflation and, 394
  productivity trends since, 363–364
  taxes levied to pay for, 431
  unilateral transfers and, 560

Y

Yunus, Muhammad (Founder, Grameen Bank), 586

Z

Zoning boards, 38