# CONTENTS

Preface xxv

PART 1 What Is Economics?

►INTRODUCTION	The Ordinary
	Business of Life1

ANY GIVEN SUNDAY 1

The Invisible Hand 2 My Benefit, Your Cost 3

Good Times, Bad Times 3

Onward and Upward 4

An Engine for Discovery 4

### 

#### COMMON GROUND 5

#### Principles That Underlie Individual Choice: The Core of Economics 6

Principle #1: Choices Are Necessary Because Resources Are Scarce 6 Principle #2: The True Cost of Something Is Its Opportunity Cost 7

Principle #3: "How Much" Is a Decision at the Margin **8** 

Principle #4: People Usually Respond to Incentives, Exploiting Opportunities to Make Themselves Better Off **9** 

FOR INQUIRING MINDS: Cashing In at School 10 ECONOMICS ➤ //N ACT/ON Boy or Girl? It Depends on the Cost 10

#### Interaction: How Economies Work 12

Principle #5: There Are Gains from Trade 12 Principle #6: Markets Move Toward Equilibrium 13

#### FOR INQUIRING MINDS: Choosing Sides 14

Principle #7: Resources Should Be Used Efficiently to Achieve Society's Goals **15** 

Principle #8: Markets Usually Lead to Efficiency **16** Principle #9: When Markets Don't Achieve Efficiency, Government Intervention Can Improve Society's Welfare **16** 

ECONOMICS ➤ *IN ACTION* Restoring Equilibrium on the Freeways **17** 

#### **Economy-Wide Interactions 18**

Principle #10: One Person's Spending Is Another Person's Income **18** 

Principle #11: Overall Spending Sometimes Gets Out of Line with the Economy's Productive Capacity **19** Principle #12: Government Policies Can Change Spending **19** 

ECONOMICS > IN ACTION Adventures in Babysitting 20

BUSINESS CASE: How Priceline.com Revolutionized the Travel Industry 21

# 

FROM KITTY HAWK TO DREAMLINER 25

Models in Economics: Some Important Examples 26

FOR INQUIRING MINDS: The Model That Ate the Economy 26 Trade-offs: The Production Possibility Frontier 27 Comparative Advantage and Gains from Trade 33 Comparative Advantage and International Trade, in Reality 36

GLOBAL COMPARISON: Pajama Republics 37 Transactions: The Circular-Flow Diagram 37

ECONOMICS ➤ IN ACTION Rich Nation, Poor Nation 39

#### Using Models 40

Positive versus Normative Economics **40** When and Why Economists Disagree **41** 

FOR INQUIRING MINDS: When Economists Agree 42

ECONOMICS ➤ *IN ACTION* Economists, Beyond the Ivory Tower **43** 

BUSINESS CASE: Efficiency, Opportunity Cost, and the Logic of Lean Production 45

CHAPTER 2 APPENDIX Graphs in

### 

#### Getting the Picture 51

Graphs, Variables, and Economic Models 51

How Graphs Work 51 Two-Variable Graphs 51 Curves on a Graph 53

### A Key Concept: The Slope of a Curve 54

The Slope of a Linear Curve Horizontal and Vertical Curves and Their Slopes The Slope of a Nonlinear Curve Calculating the Slope Along a Nonlinear Curve Maximum and Minimum Points

### Calculating the Area Below or Above a Curve 59

# Graphs That Depict Numerical Information 60

Types of Numerical Graphs **60** Problems in Interpreting Numerical Graphs **62** 

# PART 2 Supply and Demand

# 

#### A NATURAL GAS BOOM 67

#### Supply and Demand: A Model of a Competitive Market 68

#### The Demand Curve 69

The Demand Schedule and the Demand Curve **69** Shifts of the Demand Curve **70** 

GLOBAL COMPARISON: Pay More, Pump Less 71 Understanding Shifts of the Demand Curve 73

ECONOMICS > IN ACTION Beating the Traffic 78

#### The Supply Curve 79

The Supply Schedule and the Supply Curve **79** Shifts of the Supply Curve **80** 

Understanding Shifts of the Supply Curve 81

ECONOMICS ➤ IN ACTION Only Creatures Small and Pampered 85

#### Supply, Demand, and Equilibrium 86

Finding the Equilibrium Price and Quantity **86** Why Do All Sales and Purchases in a Market Take Place at the Same Price? **87** 

Why Does the Market Price Fall If It Is Above the Equilibrium Price? **88** 

Why Does the Market Price Rise If It Is Below the Equilibrium Price? 88

Using Equilibrium to Describe Markets 89

ECONOMICS ➤ IN ACTION The Price of Admission 89

#### Changes in Supply and Demand 90

What Happens When the Demand Curve Shifts **91** What Happens When the Supply Curve Shifts **92** Simultaneous Shifts of Supply and Demand Curves **93** 

FOR INQUIRING MINDS: Tribulations on the Runway **94** ECONOMICS > IN ACTION The Cotton Panic and Crash of 2011 **95** 

Competitive Markets—And Others 96 BUSINESS CASE: An Uber Way to Get a Ride 97

# 

MAKING GAINS BY THE BOOK 103 Consumer Surplus and the Demand Curve 104 Willingness to Pay and the Demand Curve 104

How Changing Prices Affect Consumer Surplus 107 FOR INQUIRING MINDS: A Matter of Life and Death 110 ECONOMICS > IN ACTION When Money Isn't Enough 110 Producer Surplus and the Supply Curve 111 Cost and Producer Surplus 111 How Changing Prices Affect Producer Surplus 114 ECONOMICS > IN ACTION High Times Down on the Farm 115 Consumer Surplus, Producer Surplus, and the Gains from Trade 116 The Gains from Trade 116 The Efficiency of Markets 117 Equity and Efficiency 121 ECONOMICS ➤ IN ACTION Take the Keys, Please 121 A Market Economy 122 Why Markets Typically Work So Well 123 A Few Words of Caution 124 ECONOMICS > IN ACTION A Great Leap—Backward 125

Willingness to Pay and Consumer Surplus 104

# 

BUSINESS CASE: StubHub Shows Up The Boss 126

BIG CITY, NOT-SO-BRIGHT IDEAS 131 Why Governments Control Prices 132 Price Ceilings 132 Modeling a Price Ceiling 133 How a Price Ceiling Causes Inefficiency 134 FOR INQUIRING MINDS: Winners, Losers, and Rent Control 136 FOR INQUIRING MINDS: Mumbai's Rent-Control Millionaires 138 So Why Are There Price Ceilings? 139 **ECONOMICS** > *IN ACTION* Price Controls in Venezuela: "You Buy What They Have" 140 Price Floors 141 How a Price Floor Causes Inefficiency 143 GLOBAL COMPARISON: Check Out Our Low, Low Wages! 145 So Why Are There Price Floors? 146 ECONOMICS > /N ACT/ON The Rise and Fall of the Unpaid Intern 146

### **Controlling Quantities 147**

The Anatomy of Quantity Controls 148 The Costs of Quantity Controls 151 ECONOMICS > IN ACTION Crabbing, Quotas, and Saving Lives in Alaska 152 BUSINESS CASE: Medallion Financial: Cruising Right Along 154

# 

TAKEN FOR A RIDE 161

#### **Defining and Measuring Elasticity 162**

Calculating the Price Elasticity of Demand 162 An Alternative Way to Calculate Elasticities: The Midpoint Method **164** 

ECONOMICS ➤ /N ACT/ON Estimating Elasticities 165

# Interpreting the Price Elasticity of Demand 166

How Elastic Is Elastic? Price Elasticity Along the Demand Curve What Factors Determine the Price Elasticity of Demand?

ECONOMICS ➤ *IN ACTION* Responding to Your Tuition Bill **173** 

#### **Other Demand Elasticities 174**

The Cross-Price Elasticity of Demand **174** The Income Elasticity of Demand **175** 

FOR INQUIRING MINDS: Will China Save the U.S Farming Sector? 176

GLOBAL COMPARISON: Food's Bite in World Budgets 176

ECONOMICS ➤ IN ACTION Spending It 177

#### The Price Elasticity of Supply 177

Measuring the Price Elasticity of Supply **178** What Factors Determine the Price Elasticity of Supply? **179** 

ECONOMICS > IN ACTION European Farm Surpluses 180

#### An Elasticity Menagerie 181

BUSINESS CASE: The Airline Industry: Fly Less, Charge More 182

# PART 3 Individuals and Markets

#### THE FOUNDING TAXERS 187

The Economics of Taxes: A Preliminary View 188 The Effect of an Excise Tax on Quantities and Prices 188

Price Elasticities and Tax Incidence 191

ECONOMICS > IN ACTION Who Pays the FICA? 193

#### The Benefits and Costs of Taxation 194

The Revenue from an Excise Tax **194** Tax Rates and Revenue **195** 

FOR INQUIRING MINDS: French Tax Rates and L'Arc Laffer 197 The Costs of Taxation 198

Elasticities and the Deadweight Loss of a Tax 200

ECONOMICS > IN ACTION Taxing the Marlboro Man 202

#### Tax Fairness and Tax Efficiency 203

Equity versus Efficiency 204 ECONOMICS ➤ *IN ACTION* Federal Tax Philosophy 205 Understanding the Tax System 206 Tax Bases and Tax Structure 206 Equity, Efficiency, and Progressive Taxation 207 Taxes in the United States 208 GLOBAL COMPARISON: You Think You Pay High Taxes? 209 Different Taxes, Different Principles 209 FOR INQUIRING MINDS: Taxing Income versus Taxing Consumption 209 ECONOMICS ➤ *IN ACTION* The Top Marginal Income Tax Rate 210 BUSINESS CASE: Amazon versus BarnesandNoble.com 211

Two Principles of Tax Fairness 203

# 

THE EVERYWHERE PHONE 217 Comparative Advantage and International Trade 218 Production Possibilities and Comparative Advantage, Revisited 219 The Gains from International Trade 221 Comparative Advantage versus Absolute Advantage 222 GLOBAL COMPARISON: Productivity and Wages Around the World 223 Sources of Comparative Advantage 224 FOR INQUIRING MINDS: Increasing Returns to Scale and

International Trade 226

ECONOMICS ➤ /N ACT/ON How Hong Kong Lost Its Shirts 226

#### Supply, Demand, and International Trade 227

The Effects of Imports 228 The Effects of Exports 230 International Trade and Wages 232

ECONOMICS ➤ IN ACTION Trade, Wages, and Land Prices in the Nineteenth Century 233

#### The Effects of Trade Protection 234 The Effects of a Tariff 234

The Effects of an Import Quota 236

ECONOMICS ➤ IN ACTION Trade Protection in the United States 237

#### The Political Economy of Trade Protection 238

Arguments for Trade Protection The Politics of Trade Protection International Trade Agreements and the World Trade Organization

FOR INQUIRING MINDS: Tires Under Pressure 240 Challenges to Globalization 240

ECONOMICS ➤ *IN ACTION* Beefing Up Exports 242 BUSINESS CASE: Li & Fung: From Guangzhou to You 244

# PART 4 Economics and Decision Making

# 

# GOING BACK TO SCHOOL 249

#### Costs, Benefits, and Profits 250 Explicit versus Implicit Costs 250

Accounting Profit versus Economic Profit **251** Making "Either-Or" Decisions **253** 

#### FOR INQUIRING MINDS: A Tale of Two Invasions 253

ECONOMICS ➤ *IN ACTION* Farming in the Shadow of Suburbia 254

#### Making "How Much" Decisions: The Role of Marginal Analysis 255

Marginal Cost 256

Marginal Benefit 258

Marginal Analysis 259

GLOBAL COMPARISON: Portion Sizes 261 A Principle with Many Uses 262

ECONOMICS ➤ // ACT/ON The Cost of a Life 263

Sunk Costs 263

ECONOMICS ➤ *IN ACTION* A Billion Here, a Billion There... 264

#### **Behavioral Economics 265**

Rational, but Human, Too **265** Irrationality: An Economist's View **266** 

FOR INQUIRING MINDS: In Praise of Hard Deadlines 267 Rational Models for Irrational People? 269

ECONOMICS ➤ IN ACTION "The Jingle Mail Blues" 269

BUSINESS CASE: J. C. Penney's One-Price Strategy Upsets Its Customers 271

# 

How to Calculate the Present Value of One-Year Projects 277

How to Calculate the Present Value of Multiyear Projects 278

How to Calculate the Present Value of Projects with Revenues and Costs 279

# PART 5 The Consumer

# ► CHAPTER 10 The Rational A CLAM TOO FAR 281 Utility: Getting Satisfaction 282 Utility and Consumption 282 The Principle of Diminishing Marginal Utility 283 FOR INQUIRING MINDS: Is Marginal Utility Really Diminishing? 284 ECONOMICS ➤ /N ACT/ON Oysters versus Chicken 284 **Budgets and Optimal Consumption 285** Budget Constraints and Budget Lines 285 Optimal Consumption Choice 287 FOR INQUIRING MINDS: Food for Thought on Budget Constraints 288 ECONOMICS ➤ IN ACTION The Great Condiment Craze 289 Spending the Marginal Dollar 290 Marginal Utility per Dollar 291 Optimal Consumption 292 ECONOMICS ➤ IN ACTION Buying Your Way Out of Temptation 294 From Utility to the Demand Curve 294 Marginal Utility, the Substitution Effect, and the Law of Demand 294 The Income Effect 295 ECONOMICS ➤ IN ACTION Mortgage Rates and Consumer Demand 296 BUSINESS CASE: Having a Happy Meal at McDonald's 298 CHAPTER 10 APPENDIX Consumer Preferences and Mapping the Utility Function 303 Indifference Curves 303 Properties of Indifference Curves 306 Indifference Curves and Consumer Choice 307 The Marginal Rate of Substitution 308 The Tangency Condition 311

The Tangency Condition The Slope of the Budget Line Prices and the Marginal Rate of Substitution Preferences and Choices

# Using Indifference Curves: Substitutes and Complements 316

Perfect Substitutes **316** Perfect Complements **318** Less Extreme Cases **319** 

#### Prices, Income, and Demand 319

The Effects of a Price Increase **319** Income and Consumption **320** Income and Substitution Effects **323** 

# PART 6 The Production Decision

### 

THE FARMER'S MARGIN 329

#### The Production Function 330

Inputs and Output 330

GLOBAL COMPARISON: Wheat Yields Around the World **332** From the Production Function to Cost Curves **334** 

#### ECONOMICS ➤ IN ACTION The Mythical Man-Month 336

#### Two Key Concepts: Marginal Cost and Average Cost 337

Marginal Cost **337** Average Total Cost **339** Minimum Average Total Cost **342** Does the Marginal Cost Curve Always Slope Upward? **343** 

#### ECONOMICS ➤ IN ACTION Smart Grid Economics 344

#### Short-Run versus Long-Run Costs 345

Returns to Scale 348

Summing Up Costs: The Short and Long of It 349

ECONOMICS ➤ IN ACTION There's No Business Like Snow Business 350

BUSINESS CASE: Kiva Systems' Robots versus Humans: The Challenge of Holiday Order Fulfillment 351

## 

#### DECK THE HALLS 357

#### Perfect Competition 358

Defining Perfect Competition Two Necessary Conditions for Perfect Competition Free Entry and Exit

FOR INQUIRING MINDS: What's a Standardized Product? 360 ECONOMICS ➤ IN ACTION Paid to Delay 360

#### Production and Profits 361

Using Marginal Analysis to Choose the Profit-Maximizing Quantity of Output When Is Production Profitable? The Short-Run Production Decision Changing Fixed Cost Summing Up: The Perfectly Competitive Firm's Profitability and Production Conditions **370** 

ECONOMICS ➤ IN ACTION Farmers Move Up Their Supply Curves 371

#### The Industry Supply Curve 372

The Short-Run Industry Supply Curve 372

The Long-Run Industry Supply Curve 373

The Cost of Production and Efficiency in Long-Run Equilibrium **377** 

ECONOMICS ➤ IN ACTION From Global Wine Glut to Shortage 378

BUSINESS CASE: Shopping Apps, Showrooming, and the Challenges Facing Brick-and-Mortar Retailers **379** 

# PART 7 Market Structure: Beyond Perfect Competition

### 

EVERYBODY MUST GET STONES 385 Types of Market Structure 386

#### The Meaning of Monopoly 387

Monopoly: Our First Departure from Perfect Competition **387** 

What Monopolists Do 387

Why Do Monopolies Exist? 389

GLOBAL COMPARISON: The Price We Pay 391

ECONOMICS ➤ IN ACTION Newly Emerging Markets: A Diamond Monopolist's Best Friend **392** 

#### How a Monopolist Maximizes Profit 393

The Monopolist's Demand Curve and Marginal Revenue **393** 

The Monopolist's Profit-Maximizing Output and Price **397** 

Monopoly versus Perfect Competition **398** Monopoly: The General Picture **398** 

ECONOMICS ➤ *IN ACTION* Shocked by the High Price of Electricity **399** 

#### Monopoly and Public Policy 400

Welfare Effects of Monopoly **401** Preventing Monopoly **402** Dealing with Natural Monopoly **402** 

ECONOMICS ➤ IN ACTION Why is Your Broadband So Slow? And Why Does It Cost So Much? **406** 

#### **Price Discrimination 407**

The Logic of Price Discrimination **408** Price Discrimination and Elasticity **409** Perfect Price Discrimination **410**  ECONOMICS ➤ *IN ACTION* Sales, Factory Outlets, and Ghost Cities **412** 

BUSINESS CASE: Amazon and Hachette Go to War 414

#### 

CAUGHT IN THE ACT 419

### The Prevalence of Oligopoly 420

ECONOMICS ➤ /N ACT/ON Is It an Oligopoly or Not? 421

#### Understanding Oligopoly 422

A Duopoly Example **422** Collusion and Competition **423** 

ECONOMICS ➤ /N ACT/ON Bitter Chocolate? 425

#### Games Oligopolists Play 426

The Prisoners' Dilemma 426

FOR INQUIRING MINDS: Prisoners of the Arms Race 429 Overcoming the Prisoners' Dilemma: Repeated Interaction and Tacit Collusion 429

ECONOMICS ➤ /N ACT/ON The Rise and Fall and Rise of OPEC 431

#### **Oligopoly in Practice 433**

The Legal Framework 433

GLOBAL COMPARISON: Contrasting Approaches to Antitrust Regulation 434

Tacit Collusion and Price Wars 435

Product Differentiation and Price Leadership **436** How Important Is Oligopoly? **437** 

ECONOMICS ➤ *IN ACTION* The Price Wars of Christmas **438** 

BUSINESS CASE: Virgin Atlantic Blows the Whistle ... or Blows It? 440

# 

#### FAST-FOOD DIFFERENTIATION 445

The Meaning of Monopolistic Competition 446

Large Numbers 446

Differentiated Products **446** Free Entry and Exit in the Long Run **447** 

#### **Product Differentiation 447**

Differentiation by Style or Type **447** Differentiation by Location **448** Differentiation by Quality **448** 

ECONOMICS ➤ /N ACT/ON Any Color, So Long As It's Black 449

Understanding Monopolistic Competition 449

Monopolistic Competition in the Short Run **450** Monopolistic Competition in the Long Run **451**  ECONOMICS ➤ IN ACTION The Housing Bust and the Demise of the 6% Commission **454** 

### Monopolistic Competition versus Perfect Competition 455

Price, Marginal Cost, and Average Total Cost **455** Is Monopolistic Competition Inefficient? **456** 

#### **Controversies About Product Differentiation 457**

The Role of Advertising **457** Brand Names **458** 

ECONOMICS ➤ /N ACT/ON The Perfume Industry: Leading Consumers by the Nose 459

BUSINESS CASE: Gillette versus Schick: A Case of Razor Burn? 461

# PART 8 Microeconomics and Public Policy

### 

#### TROUBLE UNDERFOOT 465 External Costs and Benefits 466

FOR INQUIRING MINDS: Talking, Texting, and Driving 466 Pollution: An External Cost 467

> The Socially Optimum Quantity of Pollution **467** Why a Market Economy Produces Too Much Pollution **468**

Private Solutions to Externalities **469 ECONOMICS** > *IN ACTION* How Much Does Your Electricity Really Cost? **471** 

#### **Policies Toward Pollution 472**

Environmental Standards **472** Emissions Taxes **473** 

GLOBAL COMPARISON: Economic Growth and Greenhouse Gases in Six Countries 473

> Tradable Emissions Permits **474** Comparing Environmental Policies with an Example **475**

#### ECONOMICS ➤ IN ACTION Cap and Trade 477

#### **Positive Externalities 478**

Preserved Farmland: An External Benefit **479** Positive Externalities in Today's Economy **480** 

ECONOMICS ➤ IN ACTION The Impeccable Economic Logic of Early-Childhood Intervention Programs **480** 

#### Network Externalities 481

The External Benefits of a Network Externality 481

ECONOMICS ➤ IN ACTION The Microsoft Case 483

BUSINESS CASE: Are We Still Friends? A Tale of Facebook, MySpace, and Friendster **485** 

# 

THE GREAT STINK 489

### Private Goods-and Others 490

Characteristics of Goods **490** Why Markets Can Supply Only Private Goods Efficiently **491** 

ECONOMICS ➤ IN ACTION From Mayhem to Renaissance 492

#### Public Goods 493

Providing Public Goods **493** How Much of a Public Good Should Be Provided? **494** 

FOR INQUIRING MINDS: Voting as a Public Good **496** GLOBAL COMPARISON: Voting as a Public Good: The Global Perspective **496** 

Cost-Benefit Analysis 497

ECONOMICS > IN ACTION Old Man River 498

#### **Common Resources 499**

The Problem of Overuse 499

FOR INQUIRING MINDS: When Fertile Farmland Turned to Dust 501

The Efficient Use and Maintenance of a Common Resource **501** 

ECONOMICS ➤ IN ACTION Saving the Oceans with ITQs 502

#### Artificially Scarce Goods 503

ECONOMICS > IN ACTION Blacked-Out Games 504

BUSINESS CASE: Mauricedale Game Ranch and Hunting Endangered Animals to Save Them 506

# 

THE COMING OF OBAMACARE 511

# Poverty, Inequality, and Public Policy 512

The Logic of the Welfare State 512

FOR INQUIRING MINDS: Justice and the Welfare State 513 The Problem of Poverty 513

GLOBAL COMPARISON: Redistribution and Inequality in Rich Countries 515

Economic Inequality 517

Economic Insecurity 519

ECONOMICS ➤ IN ACTION Long-Term Trends in Income Inequality in the United States 519

### The U.S. Welfare State 521

Means-Tested Programs 522

Social Security and Unemployment Insurance **523** The Effects of the Welfare State on Poverty and Inequality **523**  ECONOMICS ➤ IN ACTION Welfare State Programs and Poverty Rates in the Great Recession, 2007–2010 524

### The Economics of Health Care 525

The Need for Health Insurance 525

FOR INQUIRING MINDS: A California Death Spiral 527 Government Health Insurance 527 The Problem of the Uninsured Before the Affordable Care Act 528 Health Care in Other Countries 529 The Affordable Care Act 530

ECONOMICS ➤ IN ACTION What Medicaid Does 533

#### The Debate over the Welfare State 534

Problems with the Welfare State 534 The Politics of the Welfare State 535

FOR INQUIRING MINDS: "We Are the 99%!" 536 ECONOMICS ➤ IN ACTION French Family Values 536 BUSINESS CASE: Welfare State Entrepreneurs 538

# PART 9 Factor Markets and Risk

# 

THE VALUE OF A DEGREE 543

#### The Economy's Factors of Production 544

The Factors of Production **544** Why Factor Prices Matter: The Allocation of Resources **544** 

Factor Incomes and the Distribution of Income 544

FOR INQUIRING MINDS: The Factor Distribution of Income and Social Change in the Industrial Revolution 545

ECONOMICS ➤ *IN ACTION* The Factor Distribution of Income in the United States **545** 

#### Marginal Productivity and Factor Demand 546

Value of the Marginal Product **546** Value of the Marginal Product and Factor Demand **548** Shifts of the Factor Demand Curve **550** 

The Marginal Productivity Theory of Income Distribution **551** 

The Markets for Land and Capital **553** The Marginal Productivity Theory of Income

Distribution 555

ECONOMICS ► /N ACT/ON Help Wanted! 555

Is the Marginal Productivity Theory of Income Distribution Really True? 556 Wage Disparities in Practice 557 Marginal Productivity and Wage Inequality Market Power Efficiency Wages Discrimination

FOR INQUIRING MINDS: How Labor Works the German Way 561 So Does Marginal Productivity Theory Work? 562

ECONOMICS ➤ /N ACT/ON Marginal Productivity and the "1%" 562

#### The Supply of Labor 563

Work versus Leisure 563 Wages and Labor Supply 564

FOR INCUIRING MINDS: Why You Can't Find a Cab When It's Raining 566 Shifts of the Labor Supply Curve 566

GLOBAL COMPARISON: The Overworked American? 567

ECONOMICS ➤ IN ACTION The Decline of the Summer Job 568

BUSINESS CASE: Wages and Workers at Costco and Walmart 569

# 

The Time Allocation Budget Line 575

The Effect of a Higher Wage Rate 576

Indifference Curve Analysis 579

# 

#### EXTREME WEATHER 581

The Economics of Risk Aversion 582 Expectations and Uncertainty 582 The Logic of Risk Aversion 583

FOR INQUIRING MINDS: The Paradox of Gambling 587 Paying to Avoid Rísk 587

ECONOMICS > IN ACTION Warranties 588

#### Buying, Selling, and Reducing Risk 588

Trading Risk **589** Making Risk Disappear: The Power of Diversification **592** 

FOR INQUIRING MINDS: Those Pesky Emotions 594 The Limits of Diversification 595

ECONOMICS ➤ IN ACTION When Lloyd's Almost Lost It 596

#### Private Information: What You Don't Know Can Hurt You 596

Adverse Selection: The Economics of Lemons **597** Moral Hazard **599**  ECONOMICS ➤ IN ACTION Franchise Owners Try Harder 600 BUSINESS CASE: The Agony of AIG 602

# PART 10 Introduction to Macroeconomics

# 

THE PAIN IN SPAIN 607 The Nature of Macroeconomics 608 Macroeconomic Questions 608 Macroeconomics: The Whole Is Greater Than the Sum of Its Parts 609 Macroeconomics: Theory and Policy 609 **ECONOMICS** > *IN ACTION* Fending Off Depression **610** The Business Cycle 611 Charting the Business Cycle 612 The Pain of Recession 613 FOR INQUIRING MINDS: Defining Recessions and Expansions 614 Taming the Business Cycle 615 GLOBAL COMPARISON: Slumps Across the Atlantic 615 ECONOMICS > IN ACTION Comparing Recessions 616 Long-Run Economic Growth 616 FOR INQUIRING MINDS: When Did Long-Run Growth Start? 618 ECONOMICS ➤ IN ACTION A Tale of Two Countries 618 Inflation and Deflation 619 The Causes of Inflation and Deflation 619 The Pain of Inflation and Deflation 620 ECONOMICS > IN ACTION A Fast (Food) Measure of Inflation 620 International Imbalances 621 ECONOMICS > IN ACTION Spain's Costly Surplus 622 BUSINESS CASE: The Business Cycle and the Decline of Montgomery Ward 624 CHAPTER 22 GDP and the CPI: Tracking THE NEW #2 629 The National Accounts 630 The Circular-Flow Diagram, Revisited and Expanded 630

Gross Domestic Product **633** Calculating GDP **634** 

#### FOR INQUIRING MINDS: Our Imputed Lives 635

FOR INQUIRING MINDS: Gross What? 638

What GDP Tells Us 639

ECONOMICS ➤ IN ACTION Creating the National Accounts 639

Real GDP: A Measure of Aggregate Output 640 Calculating Real GDP 640 What Real GDP Doesn't Measure 641

GLOBAL COMPARISON: GDP and the Meaning of Life 642

ECONOMICS ➤ /N ACTION Miracle in Venezuela? 643

### Price Indexes and the Aggregate Price Level 643

Market Baskets and Price Indexes **644** The Consumer Price Index **645** Other Price Measures **646** 

ECONOMICS ➤ *IN ACTION* Indexing to the CPI **647** BUSINESS CASE: Getting a Jump on GDP **649** 

# 

HITTING THE BRAKING POINT 655

#### The Unemployment Rate 656

Defining and Measuring Unemployment **656** The Significance of the Unemployment Rate **657** Growth and Unemployment **659** 

ECONOMICS ► IN ACTION Failure to Launch 661

#### The Natural Rate of Unemployment 662

Job Creation and Job Destruction 662 Frictional Unemployment 663 Structural Unemployment 665 The Natural Rate of Unemployment 667 GLOBAL COMPARISON: Natural Unemployment Around the OECD 668 Changes in the Natural Rate of Unemployment 668 ECONOMICS ➤ IN ACTION Structural Unemployment in East Germany 670

#### Inflation and Deflation 671

The Level of Prices Doesn't Matter ... 671 ... But the Rate of Change of Prices Does 672 Winners and Losers from Inflation 675 Inflation Is Easy; Disinflation Is Hard 676

ECONOMICS > IN ACTION Israel's Experience with Inflation 677 BUSINESS CASE: Day Labor in the Information Age 678

# PART 11 Long-Run Economic Growth

# ► CHAPTER 24 Long-Run Economic

AIRPOCALYPSE NOW 683

Comparing Economies Across Time and Space 684

Real GDP per Capita 684 Growth Rates 686 ECONOMICS ➤ /N ACTION India Takes Off 687 The Sources of Long-Run Growth 688 The Crucial Importance of Productivity 688 Explaining Growth in Productivity 689 Accounting for Growth: The Aggregate Production Function 689 What About Natural Resources? 693 ECONOMICS ➤ IN ACTION Is the End of Economic Growth in Sight? 694 Why Growth Rates Differ 695 Explaining Differences in Growth Rates 696 FOR INQUIRING MINDS: Inventing R&D 697 GLOBAL COMPARISON: What's the Matter with Italy? 698 The Role of Government in Promoting Economic Growth 698 FOR INQUIRING MINDS: The New Growth Theory 699 ECONOMICS > IN ACTION Why Did Britain Fall Behind? 700 Success, Disappointment, and Failure 701 East Asia's Miracle 702 Latin America's Disappointment 703 Africa's Troubles and Promise 703 **ECONOMICS** ➤ *IN ACTION* Are Economies Converging? 704 Is World Growth Sustainable? 706 Natural Resources and Growth, Revisited 706 Economic Growth and the Environment 708 **ECONOMICS** > *IN ACTION* The Cost of Limiting Carbon 710 BUSINESS CASE: How Boeing Got Better 712 CHAPTER 25 Savings, Investment Spending, and the Financial System ...... 717

# FUNDS FOR FACEBOOK 717

Matching Up Savings and Investment Spending 718 The Savings-Investment Spending Identity 718

FOR INQUIRING MINDS: Who Enforces the Accounting? 721 The Market for Loanable Funds 722

FOR INQUIRING MINDS: Using Present Value 723 ECONOMICS ➤ IN ACTION Sixty Years of U.S. Interest Rates 730

# The Financial System 731

Three Tasks of a Financial System **732** Types of Financial Assets **734** Financial Intermediaries **735**  GLOBAL COMPARISON: Bonds Versus Banks 737

ECONOMICS ➤ IN ACTION Banks and the South Korean Miracle 738

Financial Fluctuations 739 The Demand for Stocks 739

FOR INQUIRING MINDS: How Now, Dow Jones? 740 The Demand for Other Assets 741 Asset Price Expectations 741

FOR INQUIRING MINDS: Behavioral Finance 742 Asset Prices and Macroeconomics 743

ECONOMICS > IN ACTION The Great American Housing Bubble 744

BUSINESS CASE: Grameen Bank: Banking Against Poverty 746

# PART 12 Short-Run Economic Fluctuations

► CHAPTER 26 Income and FROM BOOM TO BUST 751 The Multiplier: An Informal Introduction 752 ECONOMICS ➤ IN ACTION Sand State Slump 754 **Consumer Spending 755** Current Disposable Income and Consumer Spending 755 Shifts of the Aggregate Consumption Function 758 ECONOMICS > IN ACTION Famous First Forecasting Failures 760 **Investment Spending 761** The Interest Rate and Investment Spending 762 Expected Future Real GDP, Production Capacity, and Investment Spending 763 Inventories and Unplanned Investment Spending 764 ECONOMICS ➤ IN ACTION Interest Rates and the U.S. Housing Boom 765 The Income-Expenditure Model 766 Planned Aggregate Spending and Real GDP 767 Income-Expenditure Equilibrium 768 The Multiplier Process and Inventory Adjustment 770 ECONOMICS > IN ACTION Inventories and the End of a Recession 773 BUSINESS CASE: What's Good for America Is Good for GM 775

# 

WHAT KIND OF SHOCK? 783 Aggregate Demand 784 Why Is the Aggregate Demand Curve Downward Sloping? 785 The Aggregate Demand Curve and the Income-Expenditure Model 786 Shifts of the Aggregate Demand Curve 788 Government Policies and Aggregate Demand 791 ECONOMICS ➤ IN ACTION Moving Along the Aggregate Demand Curve, 1979-1980 792 Aggregate Supply 792 The Short-Run Aggregate Supply Curve 793 FOR INQUIRING MINDS: What's Truly Flexible, What's Truly Sticky 794 Shifts of the Short-Run Aggregate Supply Curve 795 The Long-Run Aggregate Supply Curve 798 From the Short Run to the Long Run 800 **ECONOMICS** > IN ACTION Sticky Wages in the Great Recession 801 The AD-AS Model 802 Short-Run Macroeconomic Equilibrium 802 Shifts of Aggregate Demand: Short-Run Effects 803 Shifts of the SRAS Curve 804 GLOBAL COMPARISON: Supply Shocks of the Twenty-first Century 806 Long-Run Macroeconomic Equilibrium 806 FOR INQUIRING MINDS: Where's the Deflation? 809 ECONOMICS > IN ACTION Supply Shocks Versus Demand Shocks in Practice 809 Macroeconomic Policy 810 FOR INQUIRING MINDS: Keynes and the Long Run 811 Policy in the Face of Demand Shocks 811 Responding to Supply Shocks 812 **ECONOMICS** > *IN ACTION* Is Stabilization Policy Stabilizing? 812 BUSINESS CASE: Slow Steaming 814

# PART 13 Stabilization Policy

# 

HOW BIG IS BIG ENOUGH? 819

Fiscal Policy: The Basics 820 Taxes, Purchases of Goods and Services, Government Transfers, and Borrowing 820 The Government Budget and Total Spending 821

Expansionary and Contractionary Fiscal Policy 822 Can Expansionary Fiscal Policy Actually Work? 824 A Cautionary Note: Lags in Fiscal Policy 825 ECONOMICS ➤ IN ACTION What Was in the Recovery Act? 826 Fiscal Policy and the Multiplier 827 Multiplier Effects of an Increase in Government Purchases of Goods and Services 827 Multiplier Effects of Changes in Government Transfers and Taxes 828 How Taxes Affect the Multiplier 829 ECONOMICS > IN ACTION Austerity and the Multiplier 830 The Budget Balance 831 The Budget Balance as a Measure of Fiscal Policy 832 The Business Cycle and the Cyclically Adjusted Budget Balance 832 Should the Budget Be Balanced? 835 ECONOMICS > IN ACTION Europe's Search for a Fiscal Rule 835 Long-Run Implications of Fiscal Policy 836 Deficits, Surpluses, and Debt 837 GLOBAL COMPARISON: The American Way of Debt 838 Problems Posed by Rising Government Debt 839 Deficits and Debt in Practice 840 FOR INQUIRING MINDS: What Happened to the Debt from World War II? 841 Implicit Liabilities 841 ECONOMICS ➤ IN ACTION Are We Greece? 843 BUSINESS CASE: Here Comes the Sun 845 CHAPTER 28 APPENDIX Taxes and the ► CHAPTER 29 Money, Banking, and the Federal Reserve FUNNY MONEY 853 The Meaning of Money 854 What Is Money? 854 Roles of Money 855 GLOBAL COMPARISON: The Big Moneys 855 Types of Money 856 Measuring the Money Supply 857 FOR INQUIRING MINDS: What's with All the Currency? 858 ECONOMICS > IN ACTION The History of the Dollar 859 The Monetary Role of Banks 860

What Banks Do **860** The Problem of Bank Runs **861** Bank Regulation **862**  ECONOMICS ➤ *IN ACTION* It's a Wonderful Banking System **863** 

#### **Determining the Money Supply 864**

How Banks Create Money Reserves, Bank Deposits, and the Money Multiplier The Money Multiplier in Reality

ECONOMICS ➤ IN ACTION Multiplying Money Down 868

#### The Federal Reserve System 869

The Structure of the Fed What the Fed Does: Reserve Requirements and the Discount Rate Open-Market Operations

FOR INQUIRING MINDS: Who Gets the Interest on the Fed's Assets? 873 The European Central Bank 873

ECONOMICS ➤ IN ACTION The Fed's Balance Sheet, Normal and Abnormal 874

#### The Evolution of the American Banking System 875

The Crisis in American Banking in the Early Twentieth Century 875 Responding to Banking Crises: The Creation of the Federal Reserve 876 The Savings and Loan Crisis of the 1980s 878 Back to the Future: The Financial Crisis of 2008 878 ECONOMICS ➤ /// ACT/O// Regulation After the 2008

Crisis 881

BUSINESS CASE: The Perfect Gift: Cash or a Gift Card? 883

### 

THE MOST POWERFUL PERSON IN GOVERNMENT 889 The Demand for Money 890 The Opportunity Cost of Holding Money 890 The Money Demand Curve 892 Shifts of the Money Demand Curve 893 ECONOMICS ➤ IN ACTION A Yen for Cash 894 Money and Interest Rates 895 The Equilibrium Interest Rate 895 Two Models of Interest Rates? 897 Monetary Policy and the Interest Rate 897 Long-Term Interest Rates 899 ECONOMICS ➤ IN ACTION The Fed Reverses Course 900 Monetary Policy and Aggregate Demand 901 Expansionary and Contractionary Monetary Policy 901 Monetary Policy in Practice 902 The Taylor Rule Method of Setting Monetary Policy 903 Inflation Targeting 903 GLOBAL COMPARISON: Inflation Targets 904 The Zero Lower Bound Problem 905

ECONOMICS ➤ IN ACTION What the Fed Wants, the Fed Gets 905

#### Money, Output, and Prices in the Long Run 906

Short-Run and Long-Run Effects of an Increase in the Money Supply **906** 

Monetary Neutrality 908

Changes in the Money Supply and the Interest Rate in the Long Run  $\,908$ 

ECONOMICS ➤ IN ACTION International Evidence of Monetary Neutrality 909

BUSINESS CASE: PIMCO Bets on Cheap Money 911

# 

The Interest Rate in the Short Run **915** The Interest Rate in the Long Run **916** 

### 

BRINGING A SUITCASE TO THE BANK 919

#### Money and Inflation 920

The Classical Model of Money and Prices **920** The Inflation Tax **922** 

The Logic of Hyperinflation 923

ECONOMICS ➤ IN ACTION Zimbabwe's Inflation 925

#### Moderate Inflation and Disinflation 925

The Output Gap and the Unemployment Rate 926

FOR INQUIRING MINDS: Okun's Law 928 The Short-Run Phillips Curve 928

FOR INQUIRING MINDS: The Aggregate Supply Curve and the Short-Run Phillips Curve **930** Inflation Expectations and the Short-Run Phillips Curve **931** 

ECONOMICS ➤ IN ACTION The Phillips Curve in the Great Recession 933

# Inflation and Unemployment in the Long Run 934

The Long-Run Phillips Curve **934** The Natural Rate of Unemployment, Revisited **936** The Costs of Disinflation **936** 

GLOBAL COMPARISON: Disinflation Around the World 936

ECONOMICS ➤ IN ACTION The Great Disinflation of the 1980s 937

#### **Deflation 938**

Debt Deflation **938** Effects of Expected Deflation **939** 

ECONOMICS ➤ IN ACTION Is Europe Turning Japanese? 940

BUSINESS CASE: Licenses to Print Money 942

### 

FROM PURVEYOR OF DRY GOODS TO DESTROYER OF WORLDS 947 **Banking: Benefits and Dangers** 948 The Trade-off Between Rate of Return and Liquidity 948 The Purpose of Banking 949 Shadow Banks and the Re-emergence of Bank Runs 950 ECONOMICS ➤ IN ACTION The Day the Lights Went Out at Lehman 951 **Banking Crises and Financial Panics** 952 The Logic of Banking Crises 952 Historical Banking Crises: The Age of Panics 954 Modern Banking Crises Around the World 955 ECONOMICS ➤ IN ACTION Erin Go Broke 956 The Consequences of Banking Crises 957 Banking Crises, Recessions, and Recovery 957 Why Are Banking-Crisis Recessions So Bad? 958 Governments Step In 959 ECONOMICS > IN ACTION Banks and the Great Depression 961 The 2008 Crisis and Its Aftermath 962 Severe Crisis, Slow Recovery 962 Aftershocks in Europe 963 The Stimulus-Austerity Debate 965 The Lesson of the Post-Crisis Slump 966 ECONOMICS ➤ /N ACT/ON If Only It Were the 1930s 966 Regulation in the Wake of the Crisis 967 ECONOMICS ➤ /N ACT/ON Bent Breaks the Buck 968

# PART 14 Events and Ideas

# 

A TALE OF TWO SLUMPS 973

#### **Classical Macroeconomics 974**

Money and the Price Level 974

The Business Cycle 974

ECONOMICS ➤ *IN ACTION* When Did the Business Cycle Begin? **974** 

## The Great Depression and the Keynesian Revolution 975

Keynes's Theory 976

#### FOR INQUIRING MINDS: The Politics of Keynes 977 Policy to Fight Recessions 978

ECONOMICS ➤ IN ACTION The End of the Great Depression 978

#### Challenges to Keynesian Economics 979

The Revival of Monetary Policy 979

Monetarism 980

Limits to Macroeconomic Policy: Inflation and the Natural Rate of Unemployment **983** 

The Political Business Cycle 983

ECONOMICS ➤ *IN ACTION* The Fed's Flirtation with Monetarism **984** 

#### Rational Expectations, Real Business Cycles, and New Classical Macroeconomics 984

Rational Expectations **985** Real Business Cycles **986** 

FOR INQUIRING MINDS: Supply-Side Economics 986 ECONOMICS ➤ IN ACTION The 1970s in Reverse 987

#### **Consensus and Conflict in Modern**

#### Macroeconomics 988

Question 1: Is Expansionary Monetary Policy Helpful in Fighting Recessions? **988** 

Question 2: Is Expansionary Fiscal Policy Effective in Fighting Recessions? **989** 

Question 3: Can Monetary and/or Fiscal Policy Reduce Unemployment in the Long Run? **989** 

Question 4: Should Fiscal Policy Be Used in a Discretionary Way? **989** 

Question 5: Should Monetary Policy Be Used in a Discretionary Way? **990** 

#### Crises and Aftermath 990

ECONOMICS > IN ACTION Lats of Luck 992

# PART 15 The Open Economy

# 

SWITZERLAND DOESN'T WANT YOUR MONEY 997 Capital Flows and the Balance of Payments 998 Balance of Payments Accounts 998

FOR INQUIRING MINDS: GDP, GNP, and the Current Account 1000 Modeling the Financial Account 1002 GLOBAL COMPARISON: Big Surpluses 1003 Underlying Determinants of International Capital Flows 1005

FOR INQUIRING MINDS: A Global Savings Glut? 1005 Two-Way Capital Flows 1006

ECONOMICS ➤ *IN ACTION* The Golden Age of Capital Flows **1006** 

#### The Role of the Exchange Rate 1007

Understanding Exchange Rates 1008 The Equilibrium Exchange Rate 1008 Inflation and Real Exchange Rates 1011 Purchasing Power Parity 1013

FOR INQUIRING MINDS: Burgernomics 1013

ECONOMICS > IN ACTION Low-Cost America 1014

#### Exchange Rate Policy 1015

Exchange Rate Regimes **1016** How Can an Exchange Rate Be Held Fixed? **1016** The Exchange Rate Regime Dilemma **1018** 

FOR INQUIRING MINDS: From Bretton Woods to the Euro **1018** ECONOMICS ➤ *IN ACTION* China Pegs the Yuan **1019** 

#### Exchange Rates and Macroeconomic Policy 1020

1. Devaluation and Revaluation of Fixed Exchange Rates **1020** 

2. Monetary Policy Under Floating Exchange Rates **1021** 

3. International Business Cycles 1022

ECONOMICS ➤ IN ACTION The Little Currency That Could 1023 BUSINESS CASE: A Yen for Japanese Cars 1025

Macroeconomic Data Tables M-1 Solutions to "Check Your Understanding" Questions S-1 Glossary G-1 Index I-1