TABLE OF CONTENTS

Preface: To the Instructor vii

Preface: To the Student xxvi

PART ONE INTRODUCTION 1

CHAPTER 1 TEN PRINCIPLES OF ECONOMICS 3

How People Make Decisions 4

Principle #1: People Face Tradeoffs 4

Principle #2: The Cost of Something Is What You Give

Up to Get It 5

Principle #3: Rational People Think at the Margin 6

Principle #4: People Respond to Incentives 7

How People Interact 8

Principle #5: Trade Can Make Everyone Better Off 8

Principle #6: Markets Are Usually a Good Way

to Organize Economic Activity 9

FYI: Adam Smith and the Invisible Hand 10

Principle #7: Governments Can Sometimes Improve

Market Outcomes 11

How the Economy as a Whole Works 12

Principle #8: A Country's Standard of Living Depends

on Its Ability to Produce Goods and Services 12

Principle #9: Prices Rise When the Government Prints

Too Much Money 13

Principle #10: Society Faces a Short-Run Tradeoff

between Inflation and Unemployment 14

Conclusion 15

Summary 16

Key Concepts 16

Questions for Review 16

Problems and Applications 16

CHAPTER 2 THINKING LIKE AN ECONOMIST 19

The Economist as Scientist 20

The Scientific Method: Observation, Theory, and More

Observation 21

The Role of Assumptions 22

Economic Models 22
Our First Model: The Circular-Flow Diagram 23
Our Second Model: The Production Possibilities
Frontier 25
Microeconomics and Macroeconomics 27

The Economist as Policy Adviser 28

Positive versus Normative Analysis 28 Economists in Washington 29

Why Economists Disagree 31

Differences in Scientific Judgments 31
Differences in Values 32
Perception versus Reality 32

Let's Get Going 33

Summary 34

Key Concepts 34

Questions for Review 34

Problems and Applications 35

Appendix: Graphing—A Brief Review 36

Graphs of a Single Variable 36
Graphs of Two Variables: The Coordinate System 37
Curves in the Coordinate System 38
Slope 41
Cause and Effect 42
Omitted Variables 43
Reverse Causality 44

CHAPTER 3 INTERDEPENDENCE AND THE GAINS FROM TRADE 47

A Parable for the Modern Economy 48

Production Possibilities 48 Specialization and Trade 50

The Principle of Comparative Advantage 52

Absolute Advantage 53

Opportunity Cost and Comparative Advantage 53

Comparative Advantage and Trade 54

FYI: The Legacy of Adam Smith and David Ricardo 55

Applications of Comparative Advantage 55

Should Tiger Woods Mow His Own Lawn? 56IN THE NEWS: Who Has a Comparative Advantage in Producing Lamb?—Lamb Tariffs Fleece U.S.Consumers 56

Should the United States Trade with Other Countries? 57

Conclusion 58
Summary 59

Key Concepts 59

Questions for Review 59

Problems and Applications 59

PART TWO SUPPLY AND DEMAND I: HOW MARKETS WORK 63

CHAPTER 4 THE MARKET FORCES OF SUPPLY AND DEMAND 65

Markets and Competition 66

Competitive Markets 66

Competition: Perfect and Otherwise 66	Summary 86
Demand 67	Conclusion: How Prices Allocate Resources 88
What Determines the Quantity an Individual	Summary 89
Demands? 67	Key Concepts 90
Price 68	•
Income 68	Questions for Review 90
Prices of Related Goods 68	Problems and Applications 90
Tastes 68	
Expectations 68	CHAPTER 5
The Demand Schedule and the Demand Curve 69	ELASTICITY AND ITS APPLICATION 93
Ceteris Paribus 70	
Market Demand versus Individual Demand 70	The Elasticity of Demand 94
Shifts in the Demand Curve 72	The Price Elasticity of Demand and Its
CASE STUDY: Two Ways to Reduce the Quantity	Determinants 94
of Smoking Demanded 73	Necessities versus Luxuries 94
Supply 75	Availability of Close Substitutes 95
What Determines the Quantity an Individual	Definition of the Market 95
Supplies? 75	Time Horizon 95
Price 75	Computing the Price Elasticity of Demand 95
Input Prices 75	The Midpoint Method: A Better Way to Calculate
Technology 75	Percentage Changes and Elasticities 96
Expectations 75	The Variety of Demand Curves 98
The Supply Schedule and the Supply Curve 76	Total Revenue and the Price Elasticity of Demand 98
Market Supply versus Individual Supply 77	Elasticity and Total Revenue along a Linear
Shifts in the Supply Curve 77	Demand Curve 101
Supply and Demand Together 78	CASE STUDY: Pricing Admission to a Museum 102
Equilibrium 78	Other Demand Elasticities 102
Three Steps to Analyzing Changes in Equilibrium 81	The Income Elasticity of Demand 102
Example: A Change in Demand 83	IN THE NEWS: On the Road with Elasticity—For Whom
Shifts in Curves versus Movements	the Booth Tolls, Price Really Does Matter 103
along Curves 83	The Cross-Price Elasticity of Demand 104
Example: A Change in Supply 84	The Elasticity of Supply 104
Example: A Change in Both Supply	The Price Elasticity of Supply and Its Determinants 104
and Demand 85	Computing the Price Elasticity of Supply 105
IN THE NEWS: Mother Nature Shifts the Supply	The Variety of Supply Curves 105
Curve—4-Day Cold Spell Slams California: Crops	Three Applications of Supply, Demand, and
Devastated; Price of Citrus to Rise 86	Elasticity 108

XXXII TABLE OF CONTENTS

Can Good News for Farming Be Bad News for

Farmers? 108

Why Did OPEC Fail to Keep the Price of Oil High? 110

Does Drug Interdiction Increase or Decrease

Drug-Related Crime? 112

Conclusion 113

Summary 114

Key Concepts 114

Questions for Review 114

Problems and Applications 115

Key Concepts 136

Questions for Review 136

Problems and Applications 136

CHAPTER 6 SUPPLY, DEMAND, AND GOVERNMENT POLICIES 117

Controls on Prices 118

How Price Ceilings Affect Market Outcomes 118

CASE STUDY: Lines at the Gas Pump 120

IN THE NEWS: Does a Drought Need to Cause a Water

Shortage?—Trickle-Down Economics 121

CASE STUDY: Rent Control in the Short Run and

Long Run 122

How Price Floors Affect Market Outcomes 123

IN THE NEWS: Rent Control in New York City—Threat

to End Rent Control Stirs Up NYC 124

CASE STUDY: The Minimum Wage 126

Evaluating Price Controls 127

Taxes 128

How Taxes on Buyers Affect Market Outcomes 129

How Taxes on Sellers Affect Market Outcomes 130

CASE STUDY: Can Congress Distribute the Burden

of a Payroll Tax? 131

Elasticity and Tax Incidence 133

CASE STUDY: Who Pays the Luxury Tax? 134

Conclusion 135

Summary 135

PART THREE SUPPLY AND DEMAND II: MARKETS AND WELFARE 139

CHAPTER 7 CONSUMERS, PRODUCERS, AND THE EFFICIENCY OF MARKETS 141

Consumer Surplus 142

Willingness to Pay 142

Using the Demand Curve to Measure Consumer

Surplus 143

How a Lower Price Raises Consumer Surplus 146

What Does Consumer Surplus Measure? 147

Producer Surplus 147

Cost and the Willingness to Sell 148

Using the Supply Curve to Measure Producer

Surplus 149

How a Higher Price Raises Producer Surplus 151

Market Efficiency 152

The Benevolent Social Planner 152 Evaluating the Market Equilibrium 153 IN THE NEWS: Ticket Scalping—Tickets? Supply Meets Demand on Sidewalk 156 Conclusion: Market Efficiency and Market Failure 155 Summary 158 Key Concepts 158 **Ouestions for Review 158** Problems and Applications 158 **CHAPTER 8** APPLICATION: THE COSTS OF TAXATION 161 The Deadweight Loss of Taxation 162 How A Tax Affects Market Participants 163 Welfare without a Tax 164 Welfare with a Tax 165 Changes in Welfare 165 Deadweight Losses and the Gains from Trade 165 The Determinants of the Deadweight Loss 166 CASE STUDY: The Deadweight Loss Debate 168 FYI: Henry George and the Land Tax 170 Deadweight Loss and Tax Revenue as Taxes Vary 170 **CASE STUDY:** The Laffer Curve and Supply-Side Economics 172 IN THE NEWS: How to Be Master of the Universe— Supply-Side Is a Winning Strategy 174 Conclusion 175 Summary 175 **Key Concepts** 176 **Ouestions for Review 176**

Problems and Applications 176

CHAPTER 9 APPLICATION: INTERNATIONAL TRADE 179

The Determinants of Trade 180

The Equilibrium without Trade 180 The World Price and Comparative Advantage 181

The Winners and Losers from Trade 182

The Gains and Losses of an Exporting Country 182 The Gains and Losses of an Importing Country 184 The Effects of a Tariff 186 IN THE NEWS: Life in Isoland—Clinton Warns U.S. Will Fight Cheap Imports 187 The Effects of an Import Quota 189 The Lessons for Trade Policy 191

The Arguments for Restricting Trade 192

FYI: Other Benefits of International Trade 193 The Jobs Argument 193 The National-Security Argument 194 The Infant-Industry Argument 194 The Unfair-Competition Argument 195 The Protection-as-a-Bargaining-Chip Argument 195 **CASE STUDY:** Trade Agreements 195 IN THE NEWS: A Chicken Invasion—U.S. Chicken in Every Pot? Nyet! Russians Cry Foul 196

Conclusion 197

IN THE NEWS: The Case for Unilateral Disarmament in the Trade Wars—Free Trade without Treaties 198

Summary 200

Key Concepts 200

Questions for Review 200

Problems and Applications 201

Conclusion 220
Summary 222
Key Concepts 222
Questions for Review 222
Problems and Applications 222

CHAPTER 11 PUBLIC GOODS AND COMMON RESOURCES 225

PART FOUR THE ECONOMICS OF THE PUBLIC SECTOR 203

CHAPTER 10 EXTERNALITIES 205

Externalities and Market Inefficiency 207

Welfare Economics: A Recap 207

Negative Externalities in Production 208

Positive Externalities in Production 209

CASE STUDY: The Debate over Technology

Policy 210

Externalities in Consumption 211

Private Solutions to Externalities 212

The Types of Private Solutions 212
The Coase Theorem 213

Why Private Solutions Do Not Always Work 214

Public Policies toward Externalities 215

Regulation 215

Pigovian Taxes and Subsidies 216

CASE STUDY: Why Is Gasoline Taxed So Heavily? 217

Tradable Pollution Permits 218

Objections to the Economic Analysis of Pollution 219

IN THE NEWS: Children as Externalities—Mum's the

Word: When Children Should Be Screened and Not

Heard 221

The Different Kinds of Goods 226

Public Goods 227

The Free-Rider Problem 228

Some Important Public Goods 228

National Defense 228

Basic Research 228

Fighting Poverty 229

CASE STUDY: Are Lighthouses Public Goods? 230

The Difficult Job of Cost-Benefit Analysis 231 **CASE STUDY:** How Much Is a Life Worth? 231

IN THE NEWS: Existence Value—They Exist. Therefore

They Are. But, Do You Care? 233

Common Resources 233

The Tragedy of the Commons 234

Some Important Common Resources 235

Clean Air and Water 235

Oil Pools 235

Congested Roads 235

IN THE NEWS: The Singapore Solution—Economics of

Road Pricing 236

Fish, Whales, and Other Wildlife 237

IN THE NEWS: Should Yellowstone Charge as Much

as Disney World?—Save the Parks, and Make a

Profit 238

CASE STUDY: Why the Cow Is Not Extinct 238

Conclusion: The Importance of Property Rights 239

Summary 240

Key Concepts 240

Questions for Review 240

Problems and Applications 241

CHAPTER 12
THE DESIGN OF THE TAX SYSTEM 243

A Financial Overview of the U.S. Government 244

The Federal Government 246

Receipts 246

Spending 247

State and Local Government 248

Receipts 248

Spending 249

Taxes and Efficiency 250

Deadweight Losses 250

CASE STUDY: Should Income or Consumption

Be Taxed? 251

Administrative Burden 252

Marginal Tax Rates versus Average Tax Rates 252

IN THE NEWS: Small Business and the Tax Laws-

Obeying the Tax Laws: Small Business's Burden 253

Lump-Sum Taxes 254

Taxes and Equity 254

The Benefits Principle 255

The Ability-to-Pay Principle 255

Vertical Equity 256

CASE STUDY: How the Tax Burden Is Distributed 256

Horizontal Equity 257

CASE STUDY: Horizontal Equity and the Marriage

Tax 258

Tax Incidence and Tax Equity 259

CASE STUDY: Who Pays the Corporate Income

Tax? 260

CASE STUDY: The Flat Tax 260

Conclusion: The Tradeoff between Equity and

Efficiency 262

Summary 263

Key Concepts 263

Questions for Review 263

Problems and Applications 264

PART FIVE FIRM BEHAVIOR AND THE ORGANIZATION OF INDUSTRY 267

CHAPTER 13 THE COSTS OF PRODUCTION 269

What Are Costs? 270

Total Revenue, Total Cost, and Profit 270

Costs as Opportunity Costs 271

The Cost of Capital as an Opportunity Cost 271

Economic Profit versus Accounting Profit 272

Production and Costs 273

The Production Function 273

From the Production Function to the Total-Cost

Curve 275

The Various Measures of Cost 276

Fixed and Variable Costs 277

Average and Marginal Cost 278

Cost Curves and Their Shapes 279

xxxvi TABLE OF CONTENTS

Rising Marginal Cost 279
U-Shaped Average Total Cost 280
The Relationship between Marginal Cost and
Average Total Cost 280

Typical Cost Curves 280

Costs in the Short Run and in the Long

FYI: Lessons from a Pin Factory 285

Run 283

The Relationship Between Short-Run and Long-Run Average Total Cost 283 Economies and Diseconomies of Scale 284

Conclusion 285

Summary 286

Key Concepts 287

Ouestions for Review 287

Problems and Applications 287

CHAPTER 14 FIRMS IN COMPETITIVE MARKETS 291

What Is a Competitive Market? 292

The Meaning of Competition 292
The Revenue of a Competitive Firm 293

Profit Maximization and the Competitive Firm's Supply Curve 294

A Simple Example of Profit Maximization 294

The Marginal-Cost Curve and the Firm's Supply

Decision 295

The Firm's Short-Run Decision to Shut Down 297 Spilt Milk and Other Sunk Costs 298

CASE STUDY: Near-Empty Restaurants and Off-Season

Miniature Golf 300

The Firm's Long-Run Decision to Exit or Enter a Market 300

Measuring Profit in Our Graph for the Competitive Firm 301

IN THE NEWS: Entry and Exit in Transition
Economies—Russia Is Not Poland, and That's
Too Bad 302

The Supply Curve in a Competitive Market 304

The Short Run: Market Supply with a Fixed Number of Firms 304

The Long Run: Market Supply with Entry and Exit 305

Why Do Competitive Firms Stay in Business If They

Make Zero Profit? 307

A Shift in Demand in the Short Run and Long Run 308

Why the Long-Run Supply Curve Might Slope

Upward 308

IN THE NEWS: Entry or Overinvestment?—In Some
Industries, Executives Foresee Tough Times Ahead; A Key
Culprit: High Profits 310

Conclusion: Behind the Supply Curve 311

Summary 311

Key Concepts 312

Questions for Review 312

Problems and Applications 312

CHAPTER 15 MONOPOLY 315

Why Monopolies Arise 316

Monopoly Resources 317

CASE STUDY: The DeBeers Diamond Monopoly 317

Government-Created Monopolies 318

Natural Monopolies 318

How Monopolies Make Production and Pricing

Decisions 320

Monopoly versus Competition 320

A Monopoly's Revenue 320

Profit Maximization 323

FYI: Why a Monopoly Does Not Have a Supply

Curve 325

A Monopoly's Profit 325	Markets with Only a Few Sellers 351
CASE STUDY: Monopoly Drugs versus Generic	A Duopoly Example 352
Drugs 326	Competition, Monopolies, and Cartels 353
The Welfare Cost of Monopoly 327	The Equilibrium for an Oligopoly 353
The Deadweight Loss 328	IN THE NEWS: Modern Pirates—As U.S. Trade Grows,
The Monopoly's Profit: A Social Cost? 330	Shipping Cartels Get a Bit More Scrutiny 354
Public Policy toward Monopolies 330 Increasing Competition with Antitrust Laws 331	How the Size of an Oligopoly Affects the Market Outcome 355 CASE STUDY: OPEC and the World Oil Market 357
Regulation 332	IN THE NEWS: The Oil Cartel Makes a Comeback—
Public Ownership 333	An Oil Outsider Revives a Cartel 358
IN THE NEWS: Public Transport and Private Enterprise—Man with a Van 334 Doing Nothing 334	Game Theory and the Economics of Cooperation 358 The Prisoners' Dilemma 359
Price Discrimination 336	Oligopolies as a Prisoners' Dilemma 360
A Parable about Pricing 336	Other Examples of the Prisoners' Dilemma 361
The Moral of the Story 337	Arms Races 361
The Analytics of Price Discrimination 338	Advertising 362
Examples of Price Discrimination 339	Common Resources 363
Movie Tickets 339	The Prisoners' Dilemma and the Welfare of
IN THE NEWS: The Best Monopolist—Let's Play	Society 363
Monopoly 340	Why People Sometimes Cooperate 364
Airline Prices 342	CASE STUDY: The Prisoners' Dilemma
Discount Coupons 342	Tournament 365
Financial Aid 342	Public Policy toward Oligopolies 366
Quantity Discounts 342	Restraint of Trade and the Antitrust Laws 366
Conclusion: The Prevalence of Monopoly 343	CASE STUDY: An Illegal Phone Call 367
Summary 343	IN THE NEWS: The Short Step From Millionaire
Key Concepts 344	Executive to Convicted Felon—Jury Convicts Ex-Executives in ADM Case 368
Questions for Review 344	Controversies over Antitrust Policy 368
Problems and Applications 344	Resale Price Maintenance 369
	Predatory Pricing 369
CHAPTER 16	Tying 370
OLIGOPOLY 349	CASE STUDY: The Microsoft Case 370
	Conclusion 371
Between Monopoly and Perfect Competition 350	Summary 372

Key Concepts 372

Questions for Review 372

Problems and Applications 373

CHAPTER 17 MONOPOLISTIC COMPETITION 377

Competition with Differentiated Products 378

The Monopolistically Competitive Firm in the Short Run 378

The Long-Run Equilibrium 379

Monopolistic versus Perfect Competition 381

Excess Capacity 381

Markup over Marginal Cost 382

Monopolistic Competition and the Welfare

of Society 383

FYI: Is Excess Capacity a Social Problem? 384

Advertising 385

The Debate over Advertising 385

The Critique of Advertising 385

The Defense of Advertising 385

CASE STUDY: Advertising and the Price

of Eyeglasses 386

Advertising as a Signal of Quality 387

Brand Names 388

CASE STUDY: Brand Names under Communism 389

IN THE NEWS: TV Networks as Brand Names—A TV

Season When Image Is Everything 390

Conclusion 391

Summary 391

Key Concepts 391

Questions for Review 392

Problems and Applications 392

PART SIX THE ECONOMICS OF LABOR MARKETS 395

CHAPTER 18 THE MARKETS FOR THE FACTORS OF PRODUCTION 397

The Demand for Labor 398

The Competitive Profit-Maximizing Firm 399

The Production Function and the Marginal Product

of Labor 400

The Value of the Marginal Product and the Demand

for Labor 401

FYI: Input Demand and Output Supply: Two Sides of

the Same Coin 403

What Causes the Labor Demand Curve to

Shift? 403

The Output Price 403

Technological Change 403

The Supply of Other Factors 404

The Supply of Labor 404

The Tradeoff between Work and Leisure 404

What Causes the Labor Supply Curve to Shift? 405

Changes in Tastes 405

Changes in Alternative Opportunities 405

Immigration 405

Equilibrium in the Labor Market 405

Shifts in Labor Supply 406

IN THE NEWS: Should the Government Try to Help Poor

Regions?—Help Poor People, Not Poor Places 453

Shifts in Labor Demand 407 The Debate over Comparable Worth 432 **CASE STUDY:** Productivity and Wages 408 Conclusion 432 The Other Factors of Production: Land and IN THE NEWS: The Recent Push for Comparable Capital 410 Worth-Labor and Women Push for Equal Pay for Equilibrium in the Markets for Land and Capital 410 Equivalent Work 433 **FYI:** What Is Capital Income? 412 Summary 433 Linkages among the Factors of Production 412 **Key Concepts** 434 **CASE STUDY:** The Economics of the Black Death 413 Questions for Review 434 Conclusion 413 Problems and Applications 434 Summary 414 Key Concepts 414 **CHAPTER 20 Questions for Review 414** INCOME INEQUALITY AND POVERTY 437 Problems and Applications 415 The Measurement of Inequality 438 **CHAPTER 19** U.S. Income Inequality 439 **EARNINGS AND DISCRIMINATION** 417 **CASE STUDY:** The Women's Movement and the Income Distribution 440 Some Determinants of Equilibrium Wages 418 **CASE STUDY:** Income Inequality around the World 441 Compensating Differentials 418 The Poverty Rate 441 Human Capital 419 Problems in Measuring Inequality 443 **CASE STUDY:** The Increasing Value of Skills 420 In-Kind Transfers 444 Ability, Effort, and Chance 421 The Economic Life Cycle 444 **CASE STUDY:** The Benefits of Beauty 422 Transitory versus Permanent Income 444 An Alternative View of Education: Signaling 422 IN THE NEWS: Measuring Poverty—Devising New Math CASE STUDY: Human Capital, Natural Ability, to Define Poverty 445 and Compulsory School Attendance 423 Economic Mobility 446 The Superstar Phenomenon 424 The Political Philosophy of Redistributing Above-Equilibrium Wages: Minimum-Wage Laws, Income 446 Unions, and Efficiency Wages 425 Utilitarianism 447 The Economics of Discrimination 426 Liberalism 448 Measuring Labor-Market Discrimination 426 IN THE NEWS: A Rawlsian Billionaire-Discrimination by Employers 427 Buffett's Answer 449 **CASE STUDY:** Segregated Streetcars and the Profit Libertarianism 450 Motive 428 Policies to Reduce Poverty 451 Discrimination by Customers and Governments 429 Minimum-Wage Laws 451 IN THE NEWS: Men, Women, and Wages—The Shrinking Welfare 452

Pay Gap 430

CASE STUDY: Discrimination in Sports 430

TABLE OF CONTENTS

хſ

Negative Income Tax 453
In-Kind Transfers 454
Antipoverty Programs and Work Incentives 455
IN THE NEWS: Welfare Reform—Guess What? Welfare
Reform Works 456

Conclusion 456
Summary 458
Key Concepts 458
Questions for Review 458
Problems and Applications 458

How Changes in Income Affect the Consumer's
Choices 472
How Changes in Prices Affect the Consumer's
Choices 474
Income and Substitution Effects 475
Deriving the Demand Curve 477

Four Applications 478

Transfers? 485

Do All Demand Curves Slope Downward? 478

How Do Wages Affect Labor Supply? 480

CASE STUDY: Income Effects on Labor Supply:

Historical Trends, Lottery Winners, and the Carnegie

Conjecture 482

How Do Interest Rates Affect Household Saving? 483

Do the Poor Prefer to Receive Cash or In-Kind

Conclusion: Do People Really Think This Way? 487
Summary 488
Key Concepts 488
Questions for Review 488
Problems and Applications 489

PART SEVEN ADVANCED TOPIC 461

CHAPTER 21 THE THEORY OF CONSUMER CHOICE 463

The Budget Constraint: What the Consumer Can
Afford 464

Preferences: What the Consumer Wants 466

Representing Preferences with Indifference Curves 466

Four Properties of Indifference Curves 468

Two Extreme Examples of Indifference Curves 469

Perfect Substitutes 469

Perfect Complements 470

FYI: Utility: An Alternative Way to Represent

FYI: Utility: An Alternative Way to Represent a Consumer's Preferences 471

Optimization: What the Consumer Chooses 471

The Consumer's Optimal Choices 471

PART EIGHT THE DATA OF MACROECONOMICS 491

CHAPTER 22 MEASURING A NATION'S INCOME 493

The Economy's Income and Expenditure 494

The Measurement of Gross Domestic Product 496

"GDP Is the Market Value . . ." 496

"Of All ..." 496

"Final . . ." 497

"Goods and Services . . ." 497

"Produced . . ." 497

"Within a Country . . . " 497

FYI: Other Measures of Income 498 "... In a Given Period of Time." 498

The Components of GDP 499

Real versus Nominal GDP 500

A Numerical Example 501

The GDP Deflator 502

CASE STUDY: Real GDP over Recent History 503

GDP and Economic Well-Being 504

IN THE NEWS: GDP Lightens Up—From Greenspan,

a (Truly) Weighty Idea 505

CASE STUDY: International Differences in GDP and

the Quality of Life 506

IN THE NEWS: Hidden GDP—The Russian Economy:

Notes from Underground 507

Conclusion 508

Summary 508

Key Concepts 509

Questions for Review 509

Problems and Applications 509

CHAPTER 23
MEASURING THE COST OF LIVING 511

The Consumer Price Index 512

How the Consumer Price Index Is Calculated 512

FYI: What Is in the CPI's Basket? 514

Problems in Measuring the Cost of Living 515

IN THE NEWS: Shopping for the CPI—Is the

CPI Accurate? Ask the Sleuths Who Get the

Numbers 516

IN THE NEWS: A CPI for Senior Citizens-Prices That

Don't Fit the Profile: Is Index Mismatched to Retirees'

Reality? 518

The GDP Deflator versus the Consumer Price

Index 519

Correcting Economic Variables for the Effects

of Inflation 520

Dollar Figures from Different Times 520

CASE STUDY: Mr. Index Goes to Hollywood 521

Indexation 521

Real and Nominal Interest Rates 522

Conclusion 524

Summary 524

Key Concepts 525

Questions for Review 525

Problems and Applications 525

PART NINE THE REAL ECONOMY IN THE LONG RUN 527

CHAPTER 24
PRODUCTION AND GROWTH 529

Economic Growth around the World 530

FYI: The Magic of Compounding and the Rule

of 70 532

Productivity: Its Role and Determinants 532

Why Productivity Is So Important 533

How Productivity Is Determined 533

Physical Capital 534

Human Capital 534

Natural Resources 534

Technological Knowledge 535

FYI: The Production Function 535

CASE STUDY: Are Natural Resources a Limit to

Growth? 536

Economic Growth and Public Policy 537

The Importance of Saving and Investment 537

Diminishing Returns and the Catch-Up Effect 539

Investment from Abroad 540

Education 541

Property Rights and Political Stability 541

Free Trade 542

The Control of Population Growth 543

FYI: Thomas Malthus on Population Growth 544

Research and Development 545

CASE STUDY: The Productivity Slowdown 545

Conclusion: The Importance of Long-Run

Growth 547

IN THE NEWS: A Solution to Africa's Problems—Growth

in Africa: It Can Be Done 548

Summary 550

Key Concepts 550

Questions for Review 550

Problems and Applications 550

CHAPTER 25
SAVING, INVESTMENT, AND
THE FINANCIAL SYSTEM 553

Financial Institutions in the U.S. Economy 554

Financial Markets 555

The Bond Market 555

The Stock Market 556

Financial Intermediaries 556

FYI: How to Read the Newspaper's Stock Tables 557

Banks 557

Mutual Funds 558

Summing Up 559

Saving and Investment in the National Income

Accounts 559

IN THE NEWS: The Stock Market Boom of the 1990s—

Are Stocks Overvalued? Not a Chance 560

Some Important Identities 560

The Meaning of Saving and Investment 563

The Market for Loanable Funds 564

Supply and Demand for Loanable Funds 564

FYI: Present Value 567

Policy 1: Taxes and Saving 568

Policy 2: Taxes and Investment 569

Policy 3: Government Budget Deficits and

Surpluses 570

CASE STUDY: The Debate over the Budget

Surplus 572

CASE STUDY: The History of U.S. Government

Debt 573

Conclusion 574

Summary 575

Key Concepts 575

Questions for Review 575

Problems and Applications 576

CHAPTER 26
UNEMPLOYMENT AND
ITS NATURAL RATE 579

Identifying Unemployment 580

How Is Unemployment Measured? 580

CASE STUDY: Labor-Force Participation of Men and

Women in the U.S. Economy 584

Does the Unemployment Rate Measure What We Want
It To? 585
How Long Are the Unemployed without Work? 586
Why Are There Always Some People
Unemployed? 587

Job Search 587

Why Some Frictional Unemployment Is Inevitable 588

Public Policy and Job Search 588

Unemployment Insurance 589

IN THE NEWS: German Unemployment—For Germany,

Benefits Are Also a Burden 590

Minimum-Wage Laws 591

Unions and Collective Bargaining 592

The Economics of Unions 593

Are Unions Good or Bad for the Economy? 594

IN THE NEWS: Should You Join a Union?—On Payday,

Union Jobs Stack Up Very Well 595

The Theory of Efficiency Wages 596

Worker Health 597 Worker Turnover 597 Worker Effort 597 Worker Quality 598

FYI: The Economics of Asymmetric Information 599 **CASE STUDY:** Henry Ford and the Very Generous \$5-a-Day Wage 600

Summary 602
Key Concepts 602
Questions for Review 602
Problems and Applications 603

Conclusion 601

PART TEN MONEY AND PRICES IN THE LONG RUN 605

CHAPTER 27 THE MONETARY SYSTEM 607

The Meaning of Money 608

The Functions of Money 609

The Kinds of Money 609

IN THE NEWS: Money on the Island of Yap—

Fixed Assets, or Why a Loan in Yap Is Hard to Roll

Over 610

Money in the U.S. Economy 611

FYI: Credit Cards, Debit Cards, and Money 612 **CASE STUDY:** Where Is All the Currency? 612

The Federal Reserve System 613

The Fed's Organization 614
The Federal Open Market Committee 614

Banks and the Money Supply 615

The Simple Case of 100-Percent-Reserve Banking 616

Money Creation with Fractional-Reserve Banking 617

The Money Multiplier 618

The Fed's Tools of Monetary Control 619

Open-Market Operations 620

Reserve Requirements 620

The Discount Rate 620

Problems in Controlling the Money Supply 621

CASE STUDY: Bank Runs and the Money Supply 622

Conclusion 623

Summary 623

Key Concepts 624

Questions for Review 624

Problems and Applications 624

CHAPTER 28 MONEY GROWTH AND INFLATION 627

The Classical Theory of Inflation 629

The Level of Prices and the Value of Money 629

Money Supply, Money Demand, and Monetary

Equilibrium 630

The Effects of a Monetary Injection 632

A Brief Look at the Adjustment Process 632

The Classical Dichotomy and Monetary Neutrality 633

Velocity and the Quantity Equation 635

CASE STUDY: Money and Prices during Four

Hyperinflations 637

The Inflation Tax 638

IN THE NEWS: Russia Turns to the Inflation Tax—

Russia's New Leaders Plan to Pay Debts by Printing

Money 639

The Fisher Effect 639

The Costs of Inflation 641

A Fall in Purchasing Power? The Inflation Fallacy 641

Shoeleather Costs 642

IN THE NEWS: The Hyperinflation in Serbia—Special,

Today Only: 6 Million Dinars for a Snickers Bar 643

Menu Costs 644

Relative-Price Variability and the Misallocation of

Resources 644

Inflation-Induced Tax Distortions 644

Confusion and Inconvenience 646

A Special Cost of Unexpected Inflation: Arbitrary

Redistributions of Wealth 647

CASE STUDY: *The Wizard of Oz* and the Free-Silver

Debate 647

Conclusion 649

IN THE NEWS: How to Protect Your Savings from

Inflation—Inflation Fighters for the Long Term 650

Summary 650

Key Concepts 652

Questions for Review 652

Problems and Applications 652

PART ELEVEN THE MACROECONOMICS OF OPEN ECONOMIES 655

CHAPTER 29 OPEN-ECONOMY MACROECONOMICS: BASIC CONCEPTS 657

The International Flows of Goods and Capital 658

The Flow of Goods: Exports, Imports, and Net Exports 658

CASE STUDY: The Increasing Openness of the U.S.

Economy 659

The Flow of Capital: Net Foreign Investment 661

IN THE NEWS: It's the 21st Century, Do You Know

Where Your Capital Is?—The World's New Financier Is

You 662

The Equality of Net Exports and Net Foreign

Investment 663

IN THE NEWS: Flows between the Developing South and the Industrial North—Fantasy Economics 664 Saving, Investment, and Their Relationship to the

International Flows 664

CASE STUDY: Are U.S. Trade Deficits a National
Problem? 666

The Prices for International Transactions: Real and Nominal Exchange Rates 668

Nominal Exchange Rates 668 Real Exchange Rates 669

A First Theory of Exchange-Rate Determination: Purchasing-Power Parity 670

FYI: The Euro 671

The Basic Logic of Purchasing-Power Parity 671 Implications of Purchasing-Power Parity 672

CASE STUDY: The Nominal Exchange Rate during a Hyperinflation 673

Limitations of Purchasing-Power Parity 674 **CASE STUDY:** The Hamburger Standard 675

Conclusion 676
Summary 676
Key Concepts 677

Questions for Review 677

Problems and Applications 677

CHAPTER 30 A MACROECONOMIC THEORY OF THE OPEN ECONOMY 679

Supply and Demand for Loanable Funds and for Foreign-Currency Exchange 680

The Market for Loanable Funds 680

The Market for Foreign-Currency Exchange 682

Equilibrium in the Open Economy 684

FYI: Purchasing-Power Parity as a Special Case 684

Net Foreign Investment: The Link between the Two

Markets 685

Simultaneous Equilibrium in Two Markets 686

How Policies and Events Affect an Open

Economy 687

Government Budget Deficits 688

Trade Policy 690

Political Instability and Capital Flight 692

Conclusion 695

Summary 695

IN THE NEWS: How the Chinese Help American Home Buyers—China, of All Places, Sends Capital to U.S. 696

Key Concepts 696

Questions for Review 696

Problems and Applications 697

PART TWELVE SHORT-RUN ECONOMIC FLUCTUATIONS 699

CHAPTER 31 AGGREGATE DEMAND AND AGGREGATE SUPPLY 701

Three Key Facts about Economic Fluctuations 702

Fact 1: Economic Fluctuations Are Irregular and Unpredictable 702

Fact 2: Most Macroeconomic Quantities Fluctuate

Fact 3: As Output Falls, Unemployment Rises 705

Explaining Short-Run Economic Fluctuations 705

How the Short Run Differs from the Long

Run 705

Together 704

The Basic Model of Economic Fluctuations 706

The Aggregate-Demand Curve 707

Why the Aggregate-Demand Curve Slopes

Downward 707

The Price Level and Consumption: The Wealth

Effect 708

The Price Level and Investment: The Interest-Rate

Effect 708

The Price Level and Net Exports: The Exchange-

Rate Effect 709

Summary 709

Why the Aggregate-Demand Curve Might

Shift 709

Shifts Arising from Consumption 709

Shifts Arising from Investment 710

Shifts Arising from Government Purchases 710

Shifts Arising from Net Exports 710

Summary 711

The Aggregate-Supply Curve 712

Why the Aggregate-Supply Curve Is Vertical in the Long Run 712

Why the Long-Run Aggregate-Supply Curve Might Shift 713

Shifts Arising from Labor 713

Shifts Arising from Capital 714

Shifts Arising from Natural Resources 714

Shifts Arising from Technological

Knowledge 714

Summary 714

A New Way to Depict Long-Run Growth and

Inflation 715

Why the Aggregate-Supply Curve Slopes Upward in

the Short Run 716

The Misperceptions Theory 717

The Sticky-Wage Theory 717

The Sticky-Price Theory 717

Summary 718

Why the Short-Run Aggregate-Supply Curve Might

Shift 718

Two Causes of Economic Fluctuations 720

The Effects of a Shift in Aggregate Demand 721

CASE STUDY: Two Big Shifts in Aggregate Demand:

The Great Depression and World War II 723

IN THE NEWS: How Consumers Shift Aggregate

Demand—Consumers Get the Credit for Expanding

Economy 725

The Effects of a Shift in Aggregate Supply 725

CASE STUDY: Oil and the Economy 727

Conclusion: The Origins of Aggregate Demand and Aggregate Supply 728

Summary 729

Key Concepts 730

Questions for Review 730

Problems and Applications 730

CHAPTER 32 THE INFLUENCE OF MONETARY AND FISCAL POLICY ON AGGREGATE DEMAND 733

How Monetary Policy Influences Aggregate Demand 734

The Theory of Liquidity Preference 735

Money Supply 735 Money Demand 736

Equilibrium in the Money Market 737

The Downward Slope of the Aggregate-Demand Curve 737

FYI: Interest Rates in the Long Run and the Short Run 739

Changes in the Money Supply 740

The Role of Interest-Rate Targets in Fed Policy 740

CASE STUDY: Why the Fed Watches the Stock Market (and Vice Versa) 742

IN THE NEWS: European Central Bankers Expand Aggregate Demand—European Banks, Acting in Unison, Cut Interest Rate: 11 Nations Decide That Growth, Not Inflation, Is Top Concern 743

How Fiscal Policy Influences Aggregate Demand 744

The Crowding-Out Effect 748

Changes in Government Purchases 744

The Multiplier Effect 745

A Formula for the Spending Multiplier 745

Other Applications of the Multiplier Effect 747

Changes in Taxes 748

IN THE NEWS: Japan Tries a Fiscal Stimulus—The Land of the Rising Outlook: Public Spending May Have
Reversed Japan's Downturn 750

FYI: How Fiscal Policy Might Affect Aggregate Supply 751

Using Policy to Stabilize the Economy 751

The Case for Active Stabilization Policy 751

CASE STUDY: Keynesians in the White House 752
The Case against Active Stabilization Policy 754
Automatic Stabilizers 754

Conclusion 755

IN THE NEWS: The Independence of the Federal Reserve—Don't Tread on the Fed 756

Summary 756

Key Concepts 758

Questions for Review 758

Problems and Applications 758

CHAPTER 33 THE SHORT-RUN TRADEOFF BETWEEN INFLATION AND UNEMPLOYMENT 761

The Phillips Curve 762

Origins of the Phillips Curve 762

Aggregate Demand, Aggregate Supply, and the Phillips

Curve 763

Shifts in the Phillips Curve: The Role of Expectations 765

The Long-Run Phillips Curve 765

IN THE NEWS: The Effects of Low Unemployment—
Tighter Labor Market Widens Inflation Fears 766

Expectations and the Short-Run Phillips Curve 769

The Natural Experiment for the Natural-Rate

Hypothesis 772

IN THE NEWS: The Benefits of Low Expected Inflation—
The Virtuous Circle of Low Inflation 774

Shifts in the Phillips Curve: The Role of Supply Shocks 774

The Cost of Reducing Inflation 778

The Sacrifice Ratio 778

Rational Expectations and the Possibility of Costless

Disinflation 779

The Volcker Disinflation 780

The Greenspan Era 782

CASE STUDY: Why Were Inflation and Unemployment

So Low at the End of the 1990s? 783

Conclusion 784

Summary 785

Key Concepts 785

Questions for Review 785

Problems and Applications 786

PART THIRTEEN FINAL THOUGHTS 789

CHAPTER 34 FIVE DEBATES OVER MACROECONOMIC POLICY 791

Should Monetary and Fiscal Policymakers Try to Stabilize the Economy? 792

Pro: Policymakers Should Try to Stabilize the Economy 792 Con: Policymakers Should Not Try to Stabilize the Economy 793

Should Monetary Policy Be Made by Rule Rather Than by Discretion? 794

Pro: Monetary Policy Should Be Made by Rule 794

IN THE NEWS: Inflation Targeting—Brazil to Use Inflation

Data for Managing Interest Rates 796

Con: Monetary Policy Should Not Be Made

by Rule 796

Should the Central Bank Aim for Zero

Inflation? 797

Pro: The Central Bank Should Aim for Zero
Inflation 797
Con: The Central Bank Should Not Aim for 7

Con: The Central Bank Should Not Aim for Zero Inflation 798

Should Fiscal Policymakers Reduce the Government Debt? 800

Pro: Policymakers Should Reduce the Government
Debt 800

Con: Policymakers Should Not Reduce the Government
Debt 801

IN THE NEWS: The Budget Surplus—Lawmakers Discover
That Surpluses Can Be as Vexing as Deficits 803

Should the Tax Laws Be Reformed to Encourage Saving? 804

Pro: The Tax Laws Should Be Reformed to Encourage Saving 804

Con: The Tax Laws Should Not Be Reformed to Encourage Saving 806

Conclusion 807

Summary 807

Questions for Review 808

Problems and Applications 808

Glossary 811

Credits 817

Index 821