Principles of **Economics**









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PRINCIPLES OF ECONOMICS

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Principles of Economics

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To my father, who gave up a successful career in business and found his passion teaching finance. Thanks for encouraging me to become a teacher as well.

D.M.

To Krista: Many women do noble things, but you surpass them all.—Proverbs 31:29

L.C.

BRIEF CONTENTS

PART I Introduction

- **1** The Five Foundations of Economics 4
- 2 Model Building and Gains from Trade 24

PART II The Role of Markets

- **3** The Market at Work: Supply and Demand 68
- 4 Elasticity 108
- 5 Price Controls 146
- 6 The Efficiency of Markets and the Costs of Taxation 176
- 7 Market Inefficiencies: Externalities and Public Goods 210

PART III The Theory of the Firm

- 8 Business Costs and Production 240
- 9 Firms in a Competitive Market 270
- **10** Understanding Monopoly 302
- **11** Price Discrimination 332
- 12 Monopolistic Competition and Advertising 354
- **13** Oligopoly and Strategic Behavior 382

PART IV Labor Markets and Earnings

- 14 The Demand and Supply of Resources 420
- **15** Income, Inequality, and Poverty 456

PART V Special Topics in Microeconomics

- **16** Consumer Choice 492
- 17 Behavioral Economics and Risk Taking 526
- **18** Health Insurance and Health Care 548

PART VI Macroeconomic Basics

- 19 Introduction to Macroeconomics and Gross Domestic Product 582
- 20 Unemployment 616
- **21** The Price Level and Inflation 648
- 22 Savings, Interest Rates, and the Market for Loanable Funds 678
- 23 Financial Markets and Securities 708

PART VII The Long and Short of Macroeconomics

- 24 Economic Growth and the Wealth of Nations 734
- 25 Growth Theory 768
- 26 The Aggregate Demand–Aggregate Supply Model 802
- 27 The Great Recession, The Great Depression, and Great Macroeconomic Debates 836

PART VIII Fiscal Policy

- 28 Federal Budgets: The Tools of Fiscal Policy 860
- 29 Fiscal Policy 892

PART IX Monetary Policy

- **30** Money and the Federal Reserve 924
- **31** Monetary Policy 956

PART X International Economics

- 32 International Trade 992
- 33 International Finance 1018

CONTENTS

Preface xxxiii Acknowledgments xlvii About the Authors li

PART I Introduction



1 The Five Foundations of Economics 4

Big Questions 6

What Is Economics? 6 Microeconomics and Macroeconomics 7

What Are the Five Foundations of Economics? 7

Incentives

Economics in the Real World: How Incentives Create **Unintended Consequences** 10

Economics in the Media: Incentives: Ferris Bueller's Day Off 12

Trade-offs 12 **Opportunity Cost**

Practice What You Know: The Opportunity Cost of Attending College 14

13

Economics in the Real World: Breaking the Curse of the Bambino: How Opportunity Cost Causes a Drop in Hospital Visits While the Red Sox Play 15

Marginal Thinking 15

Economics in the Real World: Why Buying and Selling Your Textbooks Benefits You at the Margin 16 17 Trade

Conclusion 18

7

SNAPSHOT: The Foundations of Economics 19 **ECONOMICS FOR LIFE: Midcareer Earnings by Selected** Majors 20

Answering the Big Questions 21

Concepts You Should Know 22 Questions for Review 22 Study Problems 22 Solved Problems 23

2 Model Building and Gains from Trade 24

Big Questions 26

How Do Economists Study the Economy? 26 The Scientific Method in Economics 26 Positive and Normative Analysis 27 **Economic Models** 28 Practice What You Know: Positive versus Normative Statements 30 What Is a Production Possibilities Frontier? 31 The Production Possibilities Frontier and **Opportunity Cost** 32 The Production Possibilities Frontier and Economic Growth 34 Practice What You Know: The Production Possibilities Frontier: Bicycles and Cars 36 What Are the Benefits of Specialization and Trade? 37 Gains from Trade 37 Comparative Advantage 40 Finding the Right Price to Facilitate Trade 41 Economics in the Real World: Why Shaquille O'Neal Has Someone Else Help Him Move 42 **SNAPSHOT:** Shag and Comparative Demand 43 44 Practice What You Know: Opportunity Cost Economics in the Media: Opportunity Cost: Saving Private Ryan 45

What Is the Trade-off between Having More Now and Having More Later? 45

Consumer Goods, Capital Goods, and Investment 46

Economics in the Media: The Trade-off between the Present and the Future: *A Knight's Tale* 48

Practice What You Know: Trade-offs 49

Conclusion 49

ECONOMICS FOR LIFE: Failing to Account for Exogenous Factors When Making Predictions 50

52

57

Answering the Big Questions 51

Concepts You Should KnowQuestions for Review52Study Problems52Solved Problems54

Appendix 2A: Graphs in Economics 55

Graphs That Consist of One Variable 55 Time-Series Graphs 57

Graphs That Consist of Two Variables

The Slope of a Curve59Formulas for the Area of a Rectangle and aTriangle62

Cautions in Interpreting Numerical Graphs63Concepts You Should Know65Study Problems65Solved Problems65

PART II The Role of Markets

3 The Market at Work: Supply and Demand 68

Big Questions 70

What Are the Fundamentals of Markets?70Competitive Markets71Imperfect Markets72What Determines Demand?72

SNAPSHOT: The Invisible Hand 73

Practice What You Know: Markets and the Nature of Competition 74 The Demand Curve 75

Market Demand 75

Shifts in the Demand Curve

Practice What You Know: Shift or Slide? 81

Economics in the Media: Shifting the Demand Curve: *The Hudsucker Proxy* 83

76

What Determines Supply? 84

The Supply Curve84Market Supply86Shifts in the Supply Curve87

Economics in the Real World: Why Do the Prices of New Electronics Always Drop? 91

Practice What You Know: The Supply and Demand of Ice Cream 92



How Do Supply and Demand Shifts Affect a Market? 93 Supply, Demand, and Equilibrium 93 **ECONOMICS FOR LIFE:** Bringing Supply and Demand Together: Advice for Buying Your First Place 97 Conclusion 98 **Answering the Big Questions** 98 100 Concepts You Should Know 100 **Questions For Review** Study Problems 100 Solved Problems 102 Appendix 3A: Changes in Both Demand and Supply 103 Practice What You Know: When Supply and Demand Both Change: Hvbrid Cars 106

107

107

4 Elasticity 108

Big Questions 110

What Is the Price Elasticity of Demand, and What Are ItsDeterminants?110

Determinants of the Price Elasticity of Demand 110 Computing the Price Elasticity of Demand 113 Economics in the Media: Price Elasticity of Demand: *Jingle All the Way* 115 Graphing the Price Elasticity of Demand 117 Price Elasticity of Demand and Total Revenue 123

Economics in the Media: Elasticity and Total Revenue: D'oh! The Simpsons and Total Revenue 126

How Do Changes in Income and the Prices of Other Goods Affect Elasticity? 127

Income Elasticity 127

Questions for Review

Study Problem

Practice What You Know: The Price Elasticity of Demand 128

xii / Contents

Cross-Price Elasticity 130

Economics in the Real World: The Wii Rollout and Changes in the Video Game Industry 132

SNAPSHOT: Elasticity and Demand 133

Practice What You Know: Income Elasticity 134

What Is the Price Elasticity of Supply?134Determinants of the Price Elasticity of
Supply135

Practice What You Know: The Price Elasticity of Supply 138

How Do the Price Elasticity of Demand and Supply Relate to Each Other? 138

Practice What You Know: Elasticity: Trick or Treat Edition 140

Conclusion140ECONOMICS FOR LIFE: Price Elasticity of Supply and
Demand: Buying Your First Car141

Answering the Big Questions 142

Concepts You Should Know143Questions for Review143Study Problems143Solved Problems145

5 Price Controls 146

Big Questions 148

When Do Price Ceilings Matter? 148

Understanding Price Ceilings148The Effect of Price Ceilings150Price Ceilings in the Long Run152

Economics in the Media: Price Ceilings: *Moscow on the Hudson* 153

Practice What You Know: Price Ceilings: Concert Tickets 154

What Effects Do Price Ceilings Have on Economic Activity? 154

Rent Control 154 Price Gouging 155

Practice What You Know: Price Ceilings: Student Rental Apartments 158

When Do Price Floors Matter? 158

Understanding Price Floors159The Effect of Price Floors159Price Floors in the Long Run162

Practice What You Know: Price Floors: Fair-Trade Coffee 163

What Effects Do Price Floors Have on EconomicActivity?164The Minimum Wage164

Economics in the Real World: Wage Laws Squeeze South Africa's Poor 165

The Minimum Wage Is Often Nonbinding 166

Economics in the Real World: A Sweet Deal, If You Can Get It 167

Economics in the Media: The Minimum Wage: *30 Days* 168

SNAPSHOT: Minimum Wage: Always the Same? 169

Practice What You Know: Price Ceilings and Price Floors: Would a Price Control on Internet Access Be Effective? 170

Conclusion 171

Answering the Big Questions 172

ECONOMICS FOR LIFE: Price Gouging: Disaster Preparedness 173

Concepts You Should Know174Questions for Review174Study Problems174

Solved Problems 175

228

230

6 The Efficiency of Markets and the Costs of Taxation 176

Big Questions 178

What Are Consumer Surplus and Producer Surplus? 178

Consumer Surplus 178 Using Demand Curves to Illustrate Consumer Surplus 179 Producer Surplus 181 Using Supply Curves to Illustrate Producer Surplus 181 Practice What You Know: Consumer and Producer Surplus: Trendy Fashion 183

When Is a Market Efficient? 184

The Efficiency-Equity Debate 185

Economics in the Media: Efficiency: *Old School* 186

Practice What You Know: Total Surplus: How Would Lower Income Affect Urban Outfitters? 187

Why Do Taxes Create Deadweight Loss? 188 Tax Incidence 188 191 Deadweight Loss Economics in the Media: Taxing Inelastic Goods: "Taxman" by the Beatles 192 Economics in the Real World: The Short-Lived Luxury Тах 198 Balancing Deadweight Loss and Tax Revenues 199 **SNAPSHOT:** Bizarre Taxes 201 Practice What You Know: Deadweight Loss of Taxation: The Politics of Tax Rates 202 Conclusion 202 Answering the Big Questions 203 ECONOMICS FOR LIFE: Excise Taxes Are Almost Impossible to Avoid 204 Concepts You Should Know 205 205 Questions for Review Study Problems 205 Solved Problems 209

7 Market Inefficiencies: Externalities and Public Goods 210

Big Questions 212

What Are Externalities, and How Do They Affect Markets? 212

The Third-Party Problem 212

Economics in the Real World: Congestion Charges 216

Practice What You Know: Externalities: A New Theater Is Proposed 219

What Are Private Goods and Public Goods? 219

Private Property 220

Private and Public Goods 222

SNAPSHOT: The Case Behind the Coase Theorem 223

Practice What You Know: Public Goods: Are Parks Public Goods? 226

What Are the Challenges of Providing Nonexcludable Goods? 227

Practice What You Know: Common Resources: President **Obama's Inauguration** 232 Economics in the Media: Tragedy of the Commons: South Park and Water Parks 232 **ECONOMICS FOR LIFE:** Buying Used Is Good for Your Wallet and for the Environment 233 Conclusion 233 **Answering the Big Questions** 234 Concepts You Should Know 235 **Questions for Review** 235 Study Problems 235 Solved Problems 237

Economics in the Real World: Internet Piracy

228

Commons

231

Haiti

Common Resources and the Tragedy of the

Solutions to the Tragedy of the Commons

Economics in the Real World: Deforestation in

Cost-Benefit Analysis 227

PART III The Theory of the Firm

8 Business Costs and Production 240

Big Questions 242

How Are Profits and Losses Calculated? 242
Calculating Profit and Loss 242
Explicit Costs and Implicit Costs 243
Accounting Profit versus Economic Profit 244
Practice What You Know: Accounting Profit versus Economic Profit: Calculating Summer Job Profits 246
How Much Should a Firm Produce? 247
The Production Function 247
Diminishing Marginal Product 249
What Costs Do Firms Consider in the Short Run and theLong Run?250
Practice What You Know: Diminishing Returns: Snow Cone Production 251
Costs in the Short Run 252
Economics in the Media: Costs in the Short Run: <i>The Office</i> 257
Costs in the Long Run 257



SNAPSHOT: Bigger Is Not Always Better 261 Economics in the Media: Economies of Scale: Modern Times 262 Practice What You Know: Marginal Cost: The True Cost of Admission to Universal Studios 263 Conclusion 263 **Answering the Big Questions** 264 ECONOMICS FOR LIFE: How Much Does It Cost to Raise 265 a Child? Concepts You Should Know 266 **Questions for Review** 266 Study Problems 266 Solved Problems 269

9 Firms in a Competitive Market 270

Big Questions 272

How Do Competitive Markets Work? 272

Economics in the Real World: Aalsmeer Flower Auction 274

How Do Firms Maximize Profits? 274

Practice What You Know: Price Takers: Mall Food Courts 275

The Profit-Maximizing Rule 275

Economics in the Media: Competitive Markets: *The Simpsons* 277

Deciding How Much to Produce in a Competitive Market 278

The Firm in the Short Run 279	
The Firm's Short-Run Supply Curve	282
The Firm's Long-Run Supply Curve	283
Economics in the Real World: Blockbuster and Nature of Change 284	the Dynamic
Practice What You Know: The Profit-Maximizin Me the Money! 285	g Rule: Show
Sunk Costs 286	
What Does the Supply Curve Look Like in Per Competitive Markets? 286	rfectly
SNAPSHOT: Sunk Costs: If You Build It, They Come 287	Will
The Short-Run Market Supply Curve	288
The Long-Run Market Supply Curve	288

Contents / xv

How the Market Adjusts in the Long Run: An Example 291

Economics in the Media: Entry and Exit: *I Love Lucy* 293

Practice What You Know: Long-Run Profits: How Much Can a Firm Expect to Make? 295

Conclusion 296

Answering the Big Questions 297

ECONOMICS FOR LIFE: Tips for Starting Your Own Business 298

10 Understanding Monopoly 302

Big Questions 304

How Are Monopolies Created? 304 Natural Barriers 304

Government-Created Barriers 305

Economics in the Real World: Merck's Zocor 306

Practice What You Know: Monopoly: Can You Spot the Monopolist? 307

Economics in the Media: Barriers to Entry: *Forrest Gump* 308

How Much Do Monopolies Charge, and How Much Do They Produce? 309

The Profit-Maximizing Rule for the Monopolist 310

Economics in the Real World: The Broadband Monopoly 314

Practice What You Know: Monopoly Profits: How Much Do Monopolists Make? 315 Concepts You Should Know299Questions for Review299Study Problems299Solved Problems301

What Are the Problems with, and Solutions for,
Monopoly? 315
The Problems with Monopoly 316
Practice What You Know: Problems with Monopoly: Coffee Consolidation 319
Economics in the Real World: New York City Taxis 320
Economics in the Media: The Problems of Monopoly: <i>One-</i> <i>Man Band</i> 321
Solutions to the Problems of Monopoly 321
SNAPSHOT: The Demise of a Monopoly 323
Conclusion 325
Answering the Big Questions 326
ECONOMICS FOR LIFE: Playing Monopoly Like an Economist 327
Concepts You Should Know 328
Questions for Review 328
Study Problems 328
Solved Problems 331

11 Price Discrimination 332

Big Questions 334

What Is Price Discrimination? 334	
Conditions for Price Discrimination	334
One Price versus Price Discrimination	335

The Welfare Effects of Price Discrimination338Economics in the Media: Perfect Price Discrimination:Legally Blonde340340

Economics in the Real World: Outlet Malls—If You Build It, They Will Come 341 xvi / Contents

Practice What You Know: Price Discrimination: Taking Economics to New Heights 342

How Is Price Discrimination Practiced?344Price Discrimination at the Movies344Price Discrimination on Campus345SNAPSHOT: Now Playing: Economics!347

Practice What You Know: Price Discrimination in Practice: Everyday Examples 348

Economics in the Media: Price Discrimination: *Extreme Couponing* 349 Economics in the Real World: Groupon 349

Conclusion 350

Answering the Big Questions 350

ECONOMICS FOR LIFE: Outsmarting Grocery Store Tactics 351

Concepts You Should Know352Questions for Review352Study Problems352Solved Problems353

12 Monopolistic Competition and Advertising 354

Big Questions 356

What Is Monopolistic Competition? 356

Product Differentiation 357

Practice What You Know: Product Differentiation: Would You Recognize a Monopolistic Competitor? 358

What Are the Differences among Monopolistic Competition, Competitive Markets, and Monopoly? 358

Monopolistic Competition in the Short Run and the Long Run 359

Monopolistic Competition and Competitive Markets 361

Monopolistic Competition, Inefficiency, and Social Welfare 363

Practice What You Know: Markup: Punch Pizza versus Pizza Hut 366

Why Is Advertising Prevalent in Monopolistic Competition? 366

Economics in the Media: Advertising: Super Bowl Commercials 367 Why Firms Advertise 367 Advertising in Different Markets 369 Economics in the Media: Advertising: *E.T.: The Extra-Terrestrial* 370 **SNAPSHOT:** Advertising and the Super Bowl 371

The Negative Effects of Advertising 372

Practice What You Know: Advertising: Brands versus Generics 374

Economics in the Real World: The Federal Trade Commission versus Kevin Trudeau 376

ECONOMICS FOR LIFE: Product Differentiation: Would You Buy a Franchise? 377

Conclusion 377

Answering the Big Questions 378 Concepts You Should Know 379

 Questions for Review
 379

 Study Problems
 379

 Solved Problems
 381

13 Oligopoly and Strategic Behavior 382

Big Questions 384

What Is Oligopoly? 384

Measuring the Concentration of Industries Collusion and Cartels in a Simple Duopoly Example 386 384

Economics in the Real World: OPEC: An International Cartel 389

Economics in the Media: Nash Equilibrium: *A Brilliant Madness* 390

Oligopoly with More Than Two Firms 391

Practice What You Know: Oligopoly: Can You Recognize the Oligopolist? 391

How Does Game Theory Explain Strategic Behavior? 392

Strategic Behavior and the Dominant Strategy 392

Duopoly and the Prisoner's Dilemma 394

Economics in the Media: Prisoner's Dilemma: *Murder by Numbers* 395

Advertising and Game Theory 396

SNAPSHOT: Airlines in the Prisoner's Dilemma 397

Economics in the Real World: The Cold War 398

Escaping the Prisoner's Dilemma in the Long Run 398

Economics in the Media: Prisoner's Dilemma: *The Dark Knight* 399

A Caution about Game Theory 401 How Do Government Policies Affect Oligopoly **Behavior?** 402 Antitrust Policy 402 Practice What You Know: Dominant Strategy: To Advertise or Not—That Is the Question! 403 Predatory Pricing 405 What Are Network Externalities? 405 Practice What You Know: Predatory Pricing: Price Wars 406 **ECONOMICS FOR LIFE:** Why Waiting Is Generally a Good Idea 408 Practice What You Know: Examples of Network **Externalities** 409 Conclusion 409 **Answering the Big Questions** 410 Concepts You Should Know 411 411 Questions for Review Study Problems 411 Solved Problems 414 Appendix 13A: Two Alternative Theories of Pricing **Behavior** 415 The Kinked Demand Curve 415 **Price Leadership** 415 Concepts You Should Know 417 Study Problems 417

PART IV Labor Markets and Earnings



14 The Demand and Supply of Resources 420

Big Questions 422

What Are the Factors of Production? 422

Practice What You Know: Derived Demand: Tip Income 423

Where Does the Demand for Labor Come From?423The Marginal Product of Labor424

Changes in the Demand for Labor 426 Practice What You Know: Value of the Marginal Product of

Labor: Flower Barrettes 428

Where Does the Supply of Labor Come From? 428

The Labor-Leisure Trade-off428Changes in the Supply of Labor429

Economics in the Media: Immigration: *A Day without a Mexican* 432

Practice What You Know: The Labor Supply Curve: What Would You Do with a Big Raise? 433

What Are the Determinants of Demand and Supply in the Labor Market? 434

How Does the Market for Labor Reach Equilibrium? 434

Economics in the Real World: Where Are the Nurses? 435

Change and Equilibrium in the Labor Market 436 Outsourcing 436

Economics in the Real World: Pregnancy Becomes the Latest Job to Be Outsourced to India 438

Economics in the Media: Outsourcing: *Outsourced* 441

Monopsony 441

Economics in the Real World: Pay and Performance in Major League Baseball 442

Practice What You Know: Labor Supply: Changes in Labor Supply 443

Economics in the Media: Value of the Marginal Product of Labor: *Moneyball* 444

What Role Do Land and Capital Play in Production? 444

The Market for Land 445

SNAPSHOT: Outsourcing 447

The Market for Capital 448

When to Use More Labor, Land, or Capital 448

Economics in the Real World: The Impact of the 2008 Financial Crisis on Labor, Land, and Capital 449

Practice What You Know: Bang for the Buck: When to Use More Capital or More Labor 450

Conclusion 450

Answering the Big Questions 451

ECONOMICS FOR LIFE: Will Your Future Job Be Outsourced? 452 Concepts You Should Know 453 Questions for Review 453

Study Problems 453

Solved Problems 455

15 Income, Inequality, and Poverty 456

Big Questions 458

What Are the Determinants of Wages? 458 The Non-Monetary Determinants of Wages 458 Economics in the Real World: Does Education Really Pay? 460 Practice What You Know: Efficiency Wages: Which Company Pays an Efficiency Wage? 463 Wage Discrimination 464 Economics in the Real World: The Effects of Beauty on 466 Earnings Economics in the Media: Occupational Crowding: Anchorman: The Legend of Ron Burgundy 468 Winner-Take-All 468 What Causes Income Inequality? 469 Factors That Lead to Income Inequality 470 Economics in the Real World: 5th Pillar 470 Measuring Income Inequality 471

474

Practice What You Know: Income Inequality: The Beginning and End of Inequality 476

How Do Economists Analyze Poverty? 476	
The Poverty Rate 476	
SNAPSHOT: Income Inequality Around the World	477
Poverty Policy 479	
Economics in the Media: Welfare: Cinderella Man	480
Problems with Traditional Aid 482	
Economics in the Real World: Muhammad Yunus and th Grameen Bank 483	ie
Practice What You Know: Samaritan's Dilemma: Does Welfare Cause Unemployment? 484	
Conclusion484ECONOMICS FOR LIFE: Donating to Charity MoreEffectively485	
Answering the Big Questions 486	
Concepts You Should Know 487	
Questions for Review 487	
Study Problems 487	
Solved Problems 489	

PART V Special Topics in Microeconomics



16 Consumer Choice 492

Big Questions 494

Income Mobility

How Do Economists Model Consumer Satisfaction? 494 Economics in the Real World: Happiness Index495Total Utility and Marginal Utility495Diminishing Marginal Utility497

Practice What You Know: Diminishing Marginal Utility 497

How Do Consumers Optimize Their Purchasing Decisions? 498

Consumer Purchasing Decisions 499

SNAPSHOT: The OECD Better Life Index 501 Marginal Thinking with More Than Two Goods 502

Price Changes and the Consumer Optimum 502 Practice What You Know: Consumer Optimum 503 What Is the Diamond-Water Paradox? 504 Economics in the Media: The Diamond-Water Paradox: Super Size Me 506 Conclusion 506 Answering the Big Questions 507 **ECONOMICS FOR LIFE:** The Calculus of Romance: When Do You Know You've Found the "Right" Person? 508 Concepts You Should Know 509 Questions for Review 509 Study Problems 509 Solved Problems 511 **Appendix 16A: Indifference Curve Analysis** 512 **Indifference Curves** 512 Economic "Goods" and "Bads" 512 The Budget Constraint 514

Properties of Indifference Curves 515 Indifference Curves Are Typically Bowed 515 Inward Indifference Curves Cannot Be Thick 517 Indifference Curves Cannot Intersect 517 Extreme Preferences: Perfect Substitutes and Perfect Complements 518 Using Indifference Curves to Illustrate the Consumer Optimum 520 Using Indifference Curves to Illustrate the

Real-Income and Substitution Effects520Separating the Substitution Effect from the
Real-Income Effect522

Conclusion 524

Summary524Concepts You Should Know525Questions for Review525Study Problems525

17 Behavioral Economics and Risk Taking 526

Big Questions 528

How Can Economists Explain Irrational Behavior? 528

Misperceptions of Probabilities 529

Economics in the Real World: New Behavioral Economics Helps to Explain Stock Price Volatility 531

Practice What You Know: Gambler's Fallacy or Hot Hand Fallacy? Patterns on Exams 532

Inconsistencies in Decision-Making 532

Economics in the Media: Misperceptions of Probabilities: π 533

Economics in the Real World: Are You An Organ Donor? 534

SNAPSHOT: Opt-Out Is Optimal535Judgments about Fairness536

What Is the Role of Risk in Decision-Making? 538

Preference Reversals 538 Practice What You Know: Risk Aversion: Risk-Taking Behavior 539

Prospect Theory 540

Economics in the Media: Preference Reversals: "Mine" 541

Economics in the Real World: Why Are There Cold Openings at the Box Office? 542

ECONOMICS FOR LIFE: Bounded Rationality: How to Guard Yourself against Crime 543

Conclusion 544

Answering the Big Questions 544

Concepts You Should Know545Questions for Review545Study Problems545Solved Problems547

18 Health Insurance and Health Care 548

Big Questions 550

What Are the Important Issues in the HealthcareIndustry?550Healthcare Expenditures551Diminishing Returns553Who's Who in Health Care554Medical Costs556Practice What You Know: Physical Fitness557

How Does Asymmetric Information Affect Healthcare Delivery? 557

Adverse Selection 557 The Principal-Agent Problem 558 Moral Hazard 559

Economics in the Media: Moral Hazard: "King-Size Homer" 559

Practice What You Know: Asymmetric Information

How Do Demand and Supply Contribute to High Medical Costs? 560 Healthcare Demand 561 Third-Party Participation 561 Economics in the Media: Inelastic Healthcare Demand: John Q 562 Healthcare Supply 563 Economics in the Real World: Medical Tourism 565

Practice What You Know: Demand for Health Care: How Would Universal Health Care Alter the Demand for Medical Care? 566

How Do Incentives Influence the Quality of Health Care? 566

Single-Payer versus Private Health Care567Economics in the Real World: Health Care inFrance568

The Human Organ Shortage 569

SNAPSHOT: Health: United States vs. Canada 571

Economics in the Real World: Selling Ova to Pay for College 572

Practice What You Know: Human Organ Shortage: Liver Transplants 572

Economics in the Media: The Human Organ Black Market: *Law & Order: Special Victims Unit* 573

ECONOMICS FOR LIFE: Getting the Right Insurance 574

Conclusion 575

560

Answering the Big Questions575Concepts You Should Know577Questions for Review577Study Problems577Solved Problems579

PART VI Macroeconomic Basics

19 Introduction to Macroeconomics and Gross Domestic Product 582

Big Questions 584

How Is Macroeconomics Different fromMicroeconomics?584What Does GDP Tell Us about the Economy?585Production Equals Income585Three Uses of GDP Data586



Practice What You Know: Three Uses of GDP: GDP as an Economic Barometer 591

xxii / Contents

How Is GDP Computed? 592

592 **Counting Market Values** Including Goods and Services 592 Including Only Final Goods and Services 594 Within a Country 595 Including Only Production from a Particular Period 596 Looking at GDP as Different Types of 596 **Expenditures** Real GDP: Adjusting GDP for Price Changes 599 601 Growth Rates

What Are Some Shortcomings of GDP Data? 602

Practice What You Know: Computing Real and Nominal GDP Growth: GDP Growth in Mexico 603

SNAPSHOT: Looking at GDP in the United States604Non-Market Goods606Underground Economy606

Economics in the Real World: America's "Shadow Economy" 607 Quality of the Environment 607 Leisure Time 607 Economics in the Media: The Underground Economy: Traffic 608 Practice What You Know: Shortcomings of GDP Data: Use Caution in Interpreting GDP as an Economic Barometer 609 Conclusion 610

Answering the Big Questions

ECONOMICS FOR LIFE: Economic Growth Statistics: Deciphering Data Reports 611 Concepts You Should Know 612

610

Questions for Review612Study Problems612Solved Problems614

20 Unemployment 616

Big Questions 618

What Are the Major Reasons for

Unemployment? 618 Structural Unemployment 618 Economics in the Real World: Americans Don't Appear to Want Farm Work 622 Frictional Unemployment 622 Economics in the Real World: Employment, Italian Style 625 Cyclical Unemployment 626 The Natural Rate of Unemployment 627 What Can We Learn from the Employment Data? 628

Practice What You Know: Three Types of Unemployment: Which Type Is It? 629

629 The Unemployment Rate Economics in the Media: Structural Unemployment: The Office 632 Other Labor Market Indicators 634 Case Study: Unemployment in the Great Recession 637 **SNAPSHOT:** Unemployment and the Labor Force 638 Practice What You Know: Unemployment and Labor Force Participation Rates: Can You Compute the Rates? 640 Conclusion 642 **ECONOMICS FOR LIFE:** Finish Your Degree! 643 **Answering the Big Questions** 644 Concepts You Should Know 645 Questions for Review 645 Study Problems 645

Solved Problems 646

21 The Price Level and Inflation 648

Big Questions 650

How Is Inflation Measured? 650

The Consumer Price Index (CPI) 651 Economics in the Real World: Sleuthing for Prices 654 Measuring Inflation Rates 654 Economics in the Real World: Prices Don't All Move Together 656 Using the CPI to Equate Dollar Values over Time 657 **SNAPSHOT:** Inflation and the Consumer Price Index 658 Economics in the Real World: Which Movies Are Most Popular? 660 The Accuracy of the CPI 660 Economics in the Media: Equating Dollar Values through Time: Austin Powers: International Man of Mystery 662 Economics in the Real World: The Billion Prices Project 664 Practice What You Know: Using the CPI to Equate Prices over Time: How Cheap Were the First Super Bowl

What Problems Does Inflation Bring? 665
Shoeleather Costs 666
Money Illusion 666
Menu Costs 667
Uncertainty about Future Price Levels 668
Wealth Redistribution 669
Price Confusion 669
Tax Distortions 670
Practice What You Know: Problems with Inflation: How Big Is Your Raise in Real Terms? 671
What Is the Cause of Inflation?672The Reasons Governments Inflate the Money Supply673
Conclusion673ECONOMICS FOR LIFE:Inflation Devalues Dollars:Preparing Your Future for Inflation674
Answering the Big Questions 675
Concepts You Should Know 676
Questions for Review 676
Study Problems 676
Solved Problems 677

22 Savings, Interest Rates, and the Market for Loanable Funds 678

Big Questions 680

665

Tickets?

What Is the Loanable Fu	nds Market? 68	0
Interest Rates as a Re	eward for Saving	683
Interest Rates as a Co	ost of Borrowing	684
How Inflation Affects Interest Rates		684
What Factors Shift the S	upply of Loanable	
Funds? 686		
Income and Wealth	686	

Practice What You Know: Interest Rates and Quantity Supplied and Demanded: U.S. Interest Rates Have Fallen 687

Time Preferences 687

Consumption Smoothing 689

Economics in the Media: Time Preferences: *Confessions of a Shopaholic* 690

Economics in the Real World: Why Is the Savings Rate in the United States Falling? 692

SNAPSHOT: A Map of the Loanable Funds Market 694 Practice What You Know: Time Preferences: HIV in Developing Nations 696

What Factors Shift the Demand for Loanable Funds? 696

Productivity of Capital 696 Investor Confidence 697

Practice What You Know: Demand for Loanable Funds: SpongeBob and Loanable Funds 698

How Do We Apply the Loanable Funds Market Model? 699 Equilibrium 699 A Decline in Investor Confidence 700 A Decrease in the Supply of Loanable Funds 701

Practice What You Know: Working with the Loanable Funds Model: Foreign Savings in the United States 702

Conclusion 703

Answering the Big Questions 703

ECONOMICS FOR LIFE: Compound Interest: When Should You Start Saving for Retirement? 704 Concepts You Should Know 705 Questions for Review 705 Study Problems 705 Solved Problems 707

23 Financial Markets and Securities 708

Big Questions 710

How Do Financial Markets Help the Economy? 710 Direct and Indirect Financing 710 The Importance of Financial Markets 711 Economics in the Real World: Why Bail Out the Big Rich Banks? 712 What Are the Key Financial Tools for the Macroeconomy? 712 Practice What You Know: Direct versus Indirect Finance: Which Is It? 713 Bonds 713 Economics in the Media: Direct Finance: Boiler Room 714 Stocks 718

Secondary Markets 719

Economics in the Real World: Stock Market Indexes: Dow Jones versus S&P 721 **SNAPSHOT:** The Dow Jones Industrial Average 722 **Treasury Securities** 724 725 Home Mortgages Practice What You Know: The Effects of Foreign Investment: What If We Limit Foreign Ownership of Our National Debt? 726 Securitization 727 Conclusion 728 **Answering the Big Questions** 728 ECONOMICS FOR LIFE: Long-Run Returns for Stocks versus Bonds 729 730 Concepts You Should Know **Questions for Review** 730

Study Problems 730 Solved Problems 731

PART VII The Long and Short of Macroeconomics

24 Economic Growth and the Wealth of Nations 734

Big Questions 736

Why Does Economic Growth Matter? 736 Some Ugly Facts 736 Learning from the Past 738 Economics in the Real World: One Child Who Needs **Economic Progress** 742 Measuring Economic Growth 742 Economics in the Real World: How Does 2% Growth Affect Average People? 747 Practice What You Know: Computing Economic Growth: How Much Is Brazil Growing? 749 How Do Resources and Technology Contribute to **Economic Growth?** 749 **SNAPSHOT:** Fconomic Growth 750 Resources 752 Practice What You Know: Resources: **Growth Policy** 755 755 Technology What Institutions Foster Economic Growth? 757 Private Property Rights 757 Political Stability and the Rule of Law 758



Economics in the Real World: What Can Parking Violations Teach Us about International Institutions? 760
Competitive and Open Markets 760
Efficient Taxes 761
Stable Money and Prices 761
Practice What You Know: Institutions: Can You Guess This Country? 762
Conclusion762ECONOMICS FOR LIFE:Learning More and HelpingAlleviate Global Poverty763
Answering the Big Questions 764
Concepts You Should Know 765
Questions for Review 765
Study Problems 765

Solved Problems

767

25 Growth Theory 768

Big Questions 770

How Do Macroeconomic Theories Evol	ve? 770
The Evolution of Growth Theory	770
What Is the Solow Growth Model?	772
A Nation's Production Function	772
Diminishing Marginal Products	775

Implications of the Solow Model778Practice What You Know: Changes in Resources: Natural
Disasters780How Does Technology Affect Growth?783

Technology and the Production Function783Exogenous Technological Change784Practice What You Know: Technological Innovations: How Is

the Production Function Affected? 785

xxvi / Contents

Economics in the Media: Technological Change: *Modern* Marvels 786 Policy Implications of the Solow Model 787 Why Are Institutions the Key to Economic Growth? 787 Conclusion The Role of Institutions 788 Institutions Determine Incentives 789 Economics in the Real World: Chile: A Modern Growth Miracle 792 **SNAPSHOT:** Institutions and Growth 794

Practice What You Know: Solow Growth Theory versus Modern Growth Theory: What Policy Is Implied? 796 ECONOMICS FOR LIFE: Institutions of Growth: Applying for a Patent 797 onclusion 797

Answering the Big Questions 798

Concepts You Should Know799Questions for Review799Study Problems799Solved Problem801

26 The Aggregate Demand–Aggregate Supply Model 802

Big Questions 804

What Is the Aggregate Demand–Aggregate Supply Model? 804

What Is Aggregate Demand? 805

The Slope of the Aggregate Demand Curve 807

Shifts in Aggregate Demand 810

Economics in the Media: Changes in Wealth: *Dumb and Dumber* 811

Economics in the Real World: General Motors Sales Up in China but Down in Europe 811

Practice What You Know: Aggregate Demand: Shifts in Aggregate Demand versus Movements along the Aggregate Demand Curve 813

What Is Aggregate Supply? 814

Long-Run Aggregate Supply	815
SNAPSHOT: The Business Cycle	816
Short-Run Aggregate Supply	819

How Does the Aggregate Demand–Aggregate SupplyModel Help Us Understand the Economy?822

Practice What You Know: Long-Run Aggregate Supply and Short-Run Aggregate Supply: Which Curve Shifts? 823 Equilibrium in the Aggregate Demand–Aggregate Supply Model 823 Adjustments to Shifts in Long-Run Aggregate Supply 825 Adjustments to Shifts in Short-Run Aggregate Supply 826 Economics in the Real World: The Drought of 2012 Sends Prices Higher 827 Adjustments to Shifts in Aggregate

Demand 828

Practice What You Know: Using the Aggregate Demand– Aggregate Supply Model: The Japanese Earthquake and Tsunami of 2011 829

ECONOMICS FOR LIFE: Recession-Proof Your Job 831

Conclusion 831

Answering the Big Questions 832

Concepts You Should Know833Questions for Review833Study Problems833Solved Problems835

27 The Great Recession, the Great Depression, and Great Macroeconomic Debates 836

Big Questions 838

Exactly What Happened during the Great Recession and the Great Depression? 838

The Great Recession 838 Practice What You Know: The Great Recession: What Made

It "Great"? 843

The Great Depression 843

What Are the Big Disagreements in
Macroeconomics?847Classical Economics847SNAPSHOT: Great Recession vs. Great
Depression848

Keynesian Economics 851

Practice What You Know: The Big Debates: Guess Which View 852

Conclusion 853

Answering the Big Questions 853

Economics in the Media: The Big Disagreements in Macroeconomics: "Fear the Boom and the Bust" 854

ECONOMICS FOR LIFE: Understanding the Great Depression in Today's Context 855 Concepts You Should Know 856 Questions for Review 856 Study Problems 856 Solved Problem 857

PART VIII Fiscal Policy

28 Federal Budgets: The Tools of Fiscal Policy 860

Big Questions 862

How Does the Government Spend? 862

Government Outlays 862

Social Security and Medicare 865

Practice What You Know: Mandatory versus Discretionary Spending 866

Economics in the Real World: Are There Simple Fixes to the Social Security and Medicare Funding Problems? 869

Spending and Current Fiscal Issues 870

How Does the Government Tax? 870 Sources of Tax Revenue 871

Payroll Taxes 872

Practice What You Know: Government Revenue: Federal Taxes 874

Historical Income Tax Rates 874

Who Pays for Government? 876



What Are Budget Deficits and How Bad AreThey?877Deficits878Deficit versus Debt880SNAPSHOT: The Federal Budget Deficit882

Economics in the Real World: Several European Nations Are Grappling with Government Debt Problems 884

Foreign Ownership of U.S. Federal Debt 885

Practice What You Know: Federal Budgets: The U.S. Debt Crisis 886

Economics in the Real World: Does China Own the United States? 887

 Conclusion
 887

 ECONOMICS FOR LIFE:
 Budgeting for Your

 Take-Home Pay
 888

Answering the Big Questions 889

Concepts You Should Know890Questions for Review890Study Problems890Solved Problems891

29 Fiscal Policy

Big Questions 894

What Is Fiscal Policy? 894 **Expansionary Fiscal Policy** 894 **SNAPSHOT:** Recession, Stimulus, Reinvestment 898 **Contractionary Fiscal Policy** 901 Multipliers 903 Economics in the Media: Spending Multiplier: Pay It Forward 906 Practice What You Know: Expansionary Fiscal Policy: Shovel-Ready Projects 906 What Are the Shortcomings of Fiscal Policy? 907 Time Lags 907 Economics in the Real World: Recognizing Lags 908 Crowding-Out 908 Economics in the Real World: Did Government Spending

892

Savings Shifts 911 Practice What You Know: Crowding-Out: Does Fiscal Policy Lead to More Aggregate Demand? 912 What Is Supply-Side Fiscal Policy? 913 The Supply-Side Perspective 913 Practice What You Know: Supply Side versus Demand Side: The Bush Tax Cuts 914 Marginal Income Tax Rates 915 Conclusion 917 **Answering the Big Questions** 917 **ECONOMICS FOR LIFE:** Planning for Your Future Taxes 918

Concepts You Should Know 919 Questions for Review 919 Study Problems 919

921

Solved Problem

PART IX Monetary Policy

910

30 Money and the Federal Reserve 924

Big Questions 926

Really Surge in 2009?

What Is Money? 926

Three Functions of Money 926

Economics in the Real World: The Evolution of Prison Money 929

Measuring the Quantity of Money 929

Practice What You Know: The Definition of Money 931



How Do Banks Create Money?932The Business of Banking932

Economics in the Real World: Twenty-First-Century Bank Run 937

How Banks Create Money 938

How Does the Federal Reserve Control the Money Supply? 940 The Many Jobs of the Federal Reserve 940

Practice What You Know: Fractional Reserve Banking: The B-Money Bank 941

Economics in the Media: Moral Hazard: *Wall Street: Money Never Sleeps* 943

Practice What You Know: Federal Reserve Terminology 944 Monetary Policy Tools 944 Economics in the Real World: Excess Reserves Climb in the Wake of the Great Recession 949 SNAPSHOT: Show Me the Money! 950 Conclusion 952 Answering the Big Questions 952 Concepts You Should Know 953

Concepts for Should Know953Questions for Review953Study Problems953Solved Problems955

31 Monetary Policy 956

Big Questions 958

What Is the Effect of Monetary Policy in the Short Run? 958 **Expansionary Monetary Policy** 958 Economics in the Real World: Monetary Policy Responses to the Great Recession 961 Real versus Nominal Effects 961 **Contractionary Monetary Policy** 963 Economics in the Real World: Monetary Policy's Contribution to the Great Depression 964 Practice What You Know: Expansionary versus Contractionary Monetary Policy: Monetary Policy in the Short Run 966 Why Doesn't Monetary Policy Always Work? 966 Long-Run Adjustments 966 Adjustments in Expectations 968 Aggregate Supply Shifts and the Great Recession 969 Practice What You Know: Monetary Policy Isn't Always Effective: Why Couldn't Monetary Policy Pull Us Out of the

Great Recession? 971

What Is the Phillips Curve? 971 The Traditional Short-Run Phillips Curve 972 The Long-Run Phillips Curve 974 Expectations and the Phillips Curve 975 977 A Modern View of the Phillips Curve Implications for Monetary Policy 978 Economics in the Media: Expectations: The Invention of Lying 980 Economics in the Real World: Federal Reserve Press Conferences 981 **SNAPSHOT:** Monetary Policy 982 Practice What You Know: Monetary Policy: Expectations 984 Conclusion 984 **Answering the Big Questions** 985 **ECONOMICS FOR LIFE:** How to Protect Yourself from Inflation 986 Concepts You Should Know 987 Questions for Review 987

Study Problems 987 Solved Problems 989

PART X International Economics

32 International Trade

992

Big Questions 994

Is Globalization for Real? 994 Growth in World Trade 995

Economics in the Real World: Nicaragua Is Focused on Trade 996

Trends in U.S. Trade 996 Major Trading Partners of the United States 998

Practice What You Know: Trade in Goods and Services: Deficit or Surplus? 999

How Does International Trade Help the 1000

Economy?

Comparative Advantage 1000 Other Advantages of Trade 1002

Practice What You Know: Opportunity Cost and **Comparative Advantage: Determining Comparative** Advantage 1004

Trade Agreements and the WTO 1005

What Are the Effects of Tariffs and Quotas? 1005 **SNAPSHOT:** Major U.S. Trade Partners 1006



Tariffs 1008 1009 Quotas

Economics in the Real World: Inexpensive Shoes Face the **Highest Tariffs** 1011

Reasons Given for Trade Barriers 1011

Economics in the Media: Free Trade: Star Wars Episode I: The Phantom Menace 1012

Practice What You Know: Tariffs and Quotas: The Winners and Losers from Trade Barriers 1014

1015

Conclusion 1014 **Answering the Big Questions**

Concepts You Should Know 1016 **Review Questions** 1016 Study Problems 1016 Solved Problems 1017

33 International Finance 1018

Big Questions 1020

Why Do Exchange Rates Rise and Fall? 1020 Characteristics of Foreign Exchange Markets 1021 1024 The Demand for Foreign Currency The Supply of Foreign Currency 1025 Applying Our Model of Exchange Rates 1026 Economics in the Real World: Chinese Export Growth Slows 1031 Practice What You Know: The Bahamian Dollar Is Pegged to

the U.S. Dollar 1032

What Is Purchasing Power Parity? 1033 The Law of One Price 1033 Purchasing Power Parity and Exchange Rates 1034 Economics in the Media: Impossible Exchange Rates: Eurotrip 1035 Economics in the Real World: The Big Mac Index 1036 Why PPP Does Not Hold Perfectly 1036 What Causes Trade Deficits? 1037 Practice What You Know: The Law of One Price: What

Should the Price Be? 1038 **Balance of Payments** 1040 The Causes of Trade Deficits 1043

Practice What You Know: Current Account versus Capital	Study Problems	1052
ACCOUNT ENTITES 1045	Solved Problems	1005
Conclusion 1047		
SNAPSHOT: To Peg or Not to Peg? 1048	Glossary	A-1
Answering the Big Questions 1050	Credits	A-11
Concepts You Should Know 1051	Index	A-19
Questions for Review 1051		

PREFACE

Preface to the First Edition

We are teachers of principles of economics. That is what we do. We each teach principles of microeconomics and macroeconomics to over a thousand students a semester, every single semester, at the University of Kentucky and the University of Virginia.

We decided to write our own text for one big reason. We simply were not satisfied with the available texts and felt strongly that we could write an innovative book to which dedicated instructors like us would respond. It's not that the already available texts are bad or inaccurate—it's that they lack an understanding of what we, as teachers, have learned through fielding the thousands of questions that our students have asked us over the years. We do not advise policy makers, but we do advise students, and we know how their minds work.

For instance, there really is no text that shows an understanding for where students consistently trip up (for example, cost curves) and therefore provides an additional example, or better yet, a worked exercise. There really is no text that is careful to reinforce new terminology and difficult sticking points with explanations in everyday language. There really is no text that leverages the fact that today's students are key participants in the twentyfirst-century economy, and that uses examples and cases from markets in which they interact all the time (for example, the markets for cell phones, social networking sites, computing devices, online book sellers, etc.).

What our years in the classroom have brought home to us is the importance of meeting students where they are. This means knowing their cultural touchstones and trying to tell the story of economics with those touchstones in mind. In our text we meet students where they are through resonance and reinforcement. In fact, these two words are our mantra—we strive to make each topic resonate and then make it stick through reinforcement.

Whenever possible, we use student-centered examples that resonate with students. For instance, many of our examples refer to jobs that students often hold and businesses that often employ them. If the examples resonate, students are much more likely to dig into the material wholeheartedly and internalize key concepts.

When we teach, we try to create a rhythm of reinforcement in our lectures that begins with the presentation of new material, followed by a concrete example, followed by a reinforcing device, and then closes with a "make it stick" moment. We do this over and over again. We have tried to bring that rhythm to the book. We believe strongly that this commitment to reinforcement works. To give just one example, in our chapter "Oligopoly and Strategic Behavior," while presenting the crucial-yet-difficult subject of game theory, we work through the concept of the prisoner's dilemma at least six different ways. No educator is happy with the challenge we all face to motivate our students to read the assigned text. No matter how effective our lectures are, if our students are not reinforcing those lectures by reading the assigned text chapters, they are only partially absorbing the key takeaways that properly trained citizens need to thrive in today's world. A second key motivation for us to undertake this ambitious project was the desire to create a text that students would read, week in and week out, for the entire course. By following our commitment to resonance and reinforcement, we are confident that we have written a text that's a good read for today's students. So good, in fact, that we believe students will read entire chapters and actually enjoy them. Certainly the reports from our dozens of class testers indicate that this is the case.

What do we all want? We want our students to leave our courses having internalized fundamentals that they will remember for life. The fundamentals (understanding incentives, opportunity cost, thinking at the margin, etc.) will allow them to make better choices in the workplace, their personal investments, their long-term planning, their voting, and all their critical choices. The bottom line is that they will live more fulfilled and satisfying lives if we succeed. The purpose of this text is to help you succeed in your quest.

What does this classroom-inspired, student-centered text look like?

A Simple Narrative

First and foremost, we keep the narrative simple. We always bear in mind all those office-hour conversations with students where we searched for some way to make sense of this foreign language—for them—that is economics. It is incredibly satisfying when you find the right expression, explanation, or example that creates the "Oh, now I get it . . ." moment with your student. We have filled the narrative with those successful "now I get it" passages.

280 / CHAPTER 9 Firms in a Competitive Market



The Ice Cream Float, a cool idea on a hot day at the lake.

stores often close by 9 p.m. because operating overnight would not generate enough revenue to cover the costs of remaining open. Or consider the Ice Cream Float, which crisscrosses Smith Mountain Lake in Virginia during the summer months. You can hear the music announcing its arrival at the public beach from over a mile away. By the time the float arrives, there is usually a long line of eager customers waiting for the float to dock. This is a very profitable business on hot and sunny summer days. However, during the late spring and early fall the float operates on weekends only. Eventually, colder weather forces the busi-

ness to shut down until the crowds return the following season. This shutdown decision is a short-run calculation. If the float were to operate during the winter, it would need to pay for employees and fuel. Incurring these variable costs when there are so few customers would result in greater total costs than simply dry-docking the boat. When the float is dry-docked over the winter, only the fixed cost of storing the boat remains.

Fortunately, a firm can use a simple, intuitive rule to decide whether to operate or shut down in the short run: if the firm would lose less by shutting down than by staying open, it should shut down. Recall that costs are broken into two parts—fixed and variable. Fixed costs must be paid whether the business is open or not. Since variable costs are only incurred when the business is of

employee will choc

What Effects Do Price Ceilings Have on Economic Activity? / 157

Prices act to ration scarce resources. When the demand for generators or other necessities is high, the price rises to ensure that the available units are distributed to those who value them the most. More important, the ability to charge a higher price provides sellers with an incentive to make more units available. If there is limited ability for the price to change when demand increases, there will be a shortage. Therefore, price gouging legislation means that devastated communities must rely exclusively on the goodwill of others and the slowmoving machinery of government relief efforts. This closes off a third avenue, entrepreneurial activity, as a means to alleviate poor conditions.

Figure 5.5 shows how price gouging laws work and the shortage they create. If the demand for gas generators increases immediately after a disaster (D_{after}), the market price rises from \$530 to \$900. But since \$900 is considered excessive, sales at that price are illegal. This creates a binding price ceiling for as long as a state of emergency is in effect. Whenever a price ceiling is binding, it creates a shortage. You can see this in Figure 5.5 in the difference between quantity demanded and quantity supplied at the price ceiling level mandated by the law. In this case, the normal ability of supply and demand to ration the available generators is short-circuited. Since more people demand generators after the disaster than before it, those who do not get to the store soon enough are out of luck. When the emergency is lifted and the market returns to normal, the temporary shortage created by legislation against price gouging is eliminated.



Large generator: \$900 after Hurricane Wilma hit.



Examples and Cases That Resonate and Therefore Stick

Nothing makes this material stick for students like good examples and cases that they relate to, and we have peppered our book with them. They are not in boxed inserts. They are part of the narrative, set off with an Economics in the Real World heading.



Blockbuster's best days are long gone.

process in the short run in the context of revenues versus costs. This has enabled us to determine the profits each firm makes. But now we pause to consider *sunk costs*, a special type of cost that all firms, in every industry, must consider when making decisions.

Reinforcers

Practice What You Know boxes are inchapter exercises that allow students to self-assess while reading and provide a bit more hand-holding than usual. While other books have in-chapter questions, no other book consistently frames these exercises within real-world situations that students relate to.

Income Elasticity Question: A college student eats ramen noodles twice a week and earns \$300/week working part-time. After graduating, the student earns \$1,000/week and eats ramen noodles every other week. What is the student's Yummy, or all you can afford? income elasticity? Answer: The income elasticity of demand using the midpoint method is $- Q_1) \div [(Q_1 + Q_2) \div 2]$ $(I_2 - I_1) \div [(I_1 + I_2) \div 2]$ PRACTICE WHAT YOU KNOW $-2.0) \div [(2.0 + 0.5) \div 2]$ - \$300) ÷ [(\$300 + \$1000) ÷ 2] $-1.5 \div 1.25$ E₁ \$700 ÷ \$650 faith emand is positive for normal goods and negative he negative coefficient indicates that ramen noohe range of income-in this example, between should confirm your intuition. The higher post-... cheap drinks? e student to substitute away from ramen noodles rovide more nourishment and enjoyment.

PRACTICE WHAT YOU KNOW

Cheap pizza or . .

Shift or Slide?

Suppose that a local pizza place likes to run a "late-night special" after 11 p.m. The owners have contacted you for some advice. One of the owners tells you, "We want to increase the demand for our pizza." He proposes two marketing ideas to accomplish this:

- 1. Reduce the price of large pizzas.
- 2. Reduce the price of a complementary good—for example, offer two halfpriced bottles or cans of soda with every large pizza ordered.

Question: What will you recommend?

Answer: First, consider why "late-night specials" exist in the first place. Since most people prefer to eat dinner early in the evening, the store has to encourage late-night patrons to buy pizzas by stimulating demand. "Specials" of all sorts are used during periods of low demand when regular prices would leave the establishment largely empty.

Next, look at what the question asks. The owners want to know which option would "increase demand" more. The question is very specific; it is looking for something that will increase (or shift) demand.



Additional Reinforcers

Another notable reinforcement device is the Snapshot that appears in each chapter. We have used the innovation of modern infographics to create a memorable story that reinforces a particularly important topic.

SNAPSHOT



We have two additional elements that may seem trivial to you as a fellow instructor, but we are confident that they will help to reinforce the material with your students. The first appears near the end of each chapter, and is called Economics for Life. The goal of this insert is to apply economic reasoning to important decisions that your students will face early in their poststudent lives, such as buying or leasing a car. And the second is Economics in the Media. These boxes refer to classic scenes from movies and TV shows that deal directly with economics. One of us has written the book (literally!) on economics in the movies, and and we have used these clips year after year to make economics stick with students.

Costs in the Short Run

The Office

The popular TV series *The Office* had an amusing episode devoted to the discussion of costs. The character Michael Scott establishes his own paper company to compete with both Staples and his former company, Dunder Mifflin. He then outcompetes his rivals by keeping his fixed and variable costs low.

In one inspired scene, we see the Michael Scott Paper Company operating out of a single room and using an old church van to deliver paper. This means the company has very low *fixed costs*, which enables it to charge unusually low prices. In addition, Michael Scott keeps *variable costs* to a minimum by hiring only essential employees and not paying any benefits, such as health insurance. But this is a problem, since Michael Scott does not fully accor for the cost of the paper he is selling. In fact, he selling below unit cost!

As we will discover in upcoming chapters, firm with lower costs have many advantages in the mar Such firms can keep their prices lower to attract additional customers. Cost matters because price matters.



Price Elasticity of Supply and Demand: Buying Your First Car

When you buy a car, your knowledge of price elastic ity can help you negotiate the best possible deal.

Recall that the three determinants of price elasticity of demand are (1) the share of the budget, (2) the number of available substitutes, and (3) the time you have to make a decision.

Let's start with your budget. You should have one in mind, but don't tell the salesperson what you are willing to spend; that is a vital piece of personal information you want to keep to yourself. If the salesperson suggests that you look at a model that is too expensive, just say that you are not interested. You might reply. "Buying a car is a stretch for me; I've got to stay within my budget." If the salesperson asks indirectly about your budget by inquiring whether you have a particular monthly payment in mind, reply that you want to negotiate over the invoice price once you decide on a vehicle. Never negotiate on the sticker price, which is the price you see in the car window, because it includes thousands of dollars in markup. You want to make it clear to the salesperson that the price you pay matters to you-that is, your demand is elastic

Next, make it clear that you are gathering information and visiting other dealers. That is, reinforce that you have many available substitutes. Even if you really want a Honda, do not voice that desire to the Honda salesperson. Perhaps mention that you are also visiting the Toyota, Hyundai, and Ford showrooms. Compare what you've seen on one lot versus another. Each salesperson you meet should hear that you are seriously considering other options. This indicates to each dealership that your demand is elastic and that getting your business will require that they offer you a better price.

Taking your time to decide is also important. Never buy a car the first time you walk onto a lot. If you convey the message that you want a car immediately, you are saying that your demand is inelastic. If the dealership thinks that you have no flexibility, the staff will not give you their best offer. Instead, tell the salesperson that you appreciate their help and that you will be deciding over the next few weeks. A good salesperson will know you are serious and will ask for your phone number or email address and contact you. The salesperson will sweeten the deal if you indicate you are narrowing down your choices and they are in the running. You wait. You win.

Also know that salespeople and dealerships have times when they want to move inventory. August is an especially good month to purchase. In other words, the price elasticity of supply is at work here as well. A good time to buy is when the dealer is trying to move inventory to make room for new models, because prices fall for end-of-the-modelyear closeouts. Likewise, many sales promotions and sales bonuses are tied to the end of the month, so salespeople will be more eager to sell at that time.



Watch out for shady negotiation practices!

ECONOMICS FOR LIFE

Big-Picture Pedagogy

Chapter-Opening Misconceptions

When we first started teaching we assumed that most of our students were taking economics for the first time and were therefore blank slates that we could draw on. Boy, were we wrong. We now realize that students come to our classes with a number of strongly held misconceptions about economics and the economy, so we begin each chapter recognizing that fact and then establishing what we will do to clarify that subject area.

Big Questions

After the opening misconception, we present the learning goals for the chapter in the form of Big Questions. We come back to the Big Questions in the conclusion to the chapter with Answering the Big Questions.

12 Monopolistic Competition and Advertising

Advertising increases the price of products without adding value for the consumer.

If you drive down a busy street, you will find many competing businesses, often right next to one another. For example, in most places a consumer in search of a quick bite has many choices,

MSCONCEPTION

and more fast-food restaurants appear all the time. These competing firms advertise heavily. The temptation is to see advertising as driving up the price of a product, without any benefit to the consumer. However, this misconception doesn't account for why firms advertise. In markets where competitors sell slightly differentiated products, advertising enables firms to inform their customers about new products and services; yes, costs rise, but consumers also gain information to help make purchase decisions.

In this chapter, we look at *monopolistic competition*, a widespread market structure that has features of both competitive markets and monopoly. We also explore the benefits and disadvantages of advertising, which is prevalent in markets with monopolistic competition.

BIG QUESTIONS

- * What is monopolistic competition?
- * What are the differences among monopolistic competition, compe and monopoly?
- * Why is advertising prevalent in monopolistic competition?

ANSWERING THE BIG QUESTIONS

What is monopolistic competition?

- Monopolistic competition is a market characterized by free entry and many firms selling differentiated products.
- * Differentiation of products takes three forms: differentiation by style or type, location, and quality.

What are the differences among monopolistic competition, competitive markets, and monopoly?

- * Monopolistic competitors, like monopolists, are price makers who have downward-sloping demand curves. Whenever the demand curve is downward sloping, the firm is able to mark up the price above marginal cost. This leads to excess capacity and an inefficient level of output.
- * In the long run, barriers to entry enable a monopoly to earn an economic profit. This is not the case for monopolistic competition or competitive markets.

Why is advertising prevalent in monopolistic competition?

* Advertising performs useful functions under monopolistic competition: it conveys information about the price of the goods offered for sale, the location of products, and new products. It also signals differences in quality. However, advertising also encourages brand loyalty, which makes it harder for other businesses to successfully enter the market. Advertising can be manipulative and misleading.

Solved Problems

Last but certainly not least, we conclude each chapter with two fully solved problems that appear in the end-of-chapter material.



- a. The equilibrium price is \$4 and quantity is 60 units (quarts). The next step is to graph the curves. This is done above.
- b. A shortage of 35 units of ice cream exists at \$3; therefore, there is excess demand. Ice cream sellers will raise their price as long as excess demand exists. That is, as long as the price is below \$4. It is not until \$4 that the equilibrium point is reached and the shortage is resolved.
- 8. a. The first step is to set $Q_D = Q_S$. Doing so gives us 90 2P = P. Solving for price, we find that 90 = 3P, or P = 30. Once we know that P = 30, we can plug this value back into either of the original equations, $Q_D = 90 2P$ or $Q_S = P$. Beginning with Q_D , we get 90 (30) = 90 60 = 30, or we can plug it into $Q_S = P$, so $Q_S = 30$. Since we get a quantity of 30 for both Q_D and Q_S , we know that the price of \$30 is correct.
 - **b**. In this part, we plug \$20 into Q_D . This yields 90 2(20) = 50. Now we plug \$20 into Q_S . This yields 20.
 - **c.** Since $Q_D = 50$ and $Q_S = 20$, there is a shortage of 30 units.
 - d. Whenever there is a shortage of a good, the price will rise in order to find the equilibrium point.

Specifics about Principles of Microeconomics

Principles of Microeconomics follows the traditional structure found in most texts. Why? Because it works! One difference is the separate chapter on price discrimination. We have done this because the digital economy has made price discrimination much more common than it ever was before, so what was once a fun but somewhat marginal topic is no longer marginal. Plus, students really relate to it because they are subject to it in many of the markets in which they participate—for example, college sporting events.

The consumer theory chapter has been placed toward the end of the volume, but that does not mean that we consider it an optional chapter. We have learned that there is tremendous variation among instructors for when to present this material in the course, and we wanted to allow for maximum flexibility.

Though every chapter is critical, in our opinion, supply and demand, elasticity, and production costs are the *most* fundamental, since so many other insights and takeaways build off of them. We tried triply hard to reinforce these chapters with extra examples and opportunities for self-assessment.

Specifics about *Principles of Macroeconomics*

Principles of Macroeconomics follows the traditional structure found in most texts, but it contains several chapters on new topics that reflect the latest thinking and priorities in macroeconomics. First, at the end of the unit on macroeconomic basics, we have an entire chapter on financial markets, including coverage of securitization and mortgage-backed securities. The economic crisis of 2008–2009 made everyone aware of the importance of financial markets for the worldwide economy, and students want to know more about this fascinating subject.

Economic growth is presented before the short run, and we have two chapters devoted to the topic. The first focuses on the facts of economic growth. It discusses in largely qualitative terms how nations like South Korea and Singapore can be so wealthy, and nations like North Korea and Liberia can be so impoverished. The second chapter presents the Solow model in very simple terms. We've included this chapter to highlight the importance of growth and modeling. That said, it is optional and can be skipped by those instructors who have time for only one chapter on growth.

Coverage of the short run includes a fully developed chapter on the aggregate demand–aggregate supply model, and a second chapter that uses this key model to analyze—essentially side by side—the Great Depression and the Great Recession. We feel that this is a very effective way of presenting several of the key debates within economics.

Finally, we've written a unique chapter on the federal budget, which has allowed us to discuss at length the controversial topics of entitlements and the foreign ownership of U.S. national debt.

Supplements and Media

Norton Coursepack

Bring tutorial videos, assessment, and other online teaching resources directly into your new or existing online course with the Norton Coursepack. It's easily customizable and available for all major learning management systems including Blackboard, Desire2Learn, Angel, Moodle, and Canvas.

The Norton Coursepack for Principles of Economics includes:

- * Concept Check quizzes
- * A limited set of adapted Norton SmartWork questions
- * Infographic quizzes
- * Office Hours video tutorials
- ✤ Flashcards
- * Links to the e-book
- ∗ Test bank

The Ultimate Guide to Teaching Economics

The Ultimate Guide to Teaching Economics isn't just a guide to using Principles of Economics, it's a guide to becoming a better teacher. Combining more than 50 years of teaching experience, authors Dirk Mateer, Lee Coppock, Wayne Geerling (Penn State University), and Kim Holder (University of West Georgia) have compiled hundreds of teaching tips into one essential teaching resource. The Ultimate Guide is thoughtfully designed, making it easy for new instructors to incorporate best teaching practices into their courses and for veteran teachers to find new inspiration to enliven their lectures.

The hundreds of tips in *The Ultimate Guide to Teaching Microeconomics* and *The Ultimate Guide to Teaching Macroeconomics* include:

- Think-pair-share activities to promote smallgroup discussion and active learning
- * "Recipes" for in-class activities and demonstrations that include descriptions of the activity, required materials, estimated length of time, estimated difficulty, recommended class size, and instructions. Ready-to-use worksheets are also available for select activities.
- * Descriptions of movie clips, TV shows, commercials, and other videos that can be used in class to illustrate economic concepts
- Clicker questions
- Ideas for music examples that can be used as lecture starters
- Suggestions for additional real-world examples to engage students



In addition to the teaching tips, each chapter begins with an introduction by Dirk Mateer, highlighting important concepts to teach in the chapter and pointing out his favorite tips. Each chapter ends with solutions to the unsolved end-of-chapter problems in the textbook.

Interactive Instructor's Guide

The Interactive Instructor's Guide brings all the great content from *The Ultimate Guide to Teaching Economics* into a searchable online database that can be filtered by topic and resource type. Subscribing instructors will be alerted by email as new resources are made available.

In order to make it quick and easy for instructors to incorporate the tips from *The Ultimate Guide to Teaching Economics,* the IIG will include:

- * Links for video tips when an online video is available
- * Links to news articles for real-world examples when an article is available
- * Downloadable versions of student worksheets for activities and demonstrations
- * Downloadable PowerPoint slides for clicker questions
- * Additional teaching resources from dirkmateer.com and leecoppock.com



Office Hours Video Tutorials

This collection of more than 45 videos brings the office-hour experience online. Each video explains a fundamental concept and was conceived by and filmed with authors Dirk Mateer and Lee Coppock.

Perfect for online courses, each Office Hours video tutorial is succinct (90 seconds to two minutes in length) and mimics the office-hour experience. The videos focus on topics that are typically difficult to explain just in writing (or over email), such as shifting supply and demand curves.

The Office Hours videos have been incorporated throughout the Norton SmartWork online homework system as video feedback for questions, integrated into the e-book, included in the Norton Coursepack, and available in the instructor resource folder.

Test Bank

Every question in the *Principles of Economics* test bank has been author reviewed and approved. Each chapter (except Chapter 1) includes between 100 and 150 questions and incorporates graphs and images where appropriate.

The test bank has been developed using the Norton Assessment Guidelines. Each chapter of the test bank consists of three question types classified according to Bloom's taxonomy of knowledge types (Remembering, Understanding Applying, Analyzing Evaluating, and Creating). Questions are further classified by section and difficulty, making it easy to construct tests and quizzes that are meaningful and diagnostic.

Presentation Tools

Norton offers a variety of presentation tools so new instructors and veteran instructors alike can find the resources that are best suited for their teaching style.

Enhanced Lecture Powerpoint Slides

These comprehensive, "lecture-ready" slides are perfect for new instructors and instructors who have limited time to prepare for lecture. In addition to lecture slides, the slides also include images from the book, stepped-out versions of in-text graphs, additional examples not included in the chapter, and clicker questions.

Art Slides and Art JPEGs

For instructors who simply want to incorporate in-text art into their existing slides, all art from the book (tables, graphs, photos, and Snapshot infographics) will be available in both PowerPoint and .jpeg formats. Stepped-out versions of in-text graphs and Snapshot infographics will also be provided and will be optimized for screen projection.

Instructor Resource Folder

The Instructor Resource Folder includes the following resources in an all-inone folder:

- * The test bank in ExamView format on a CD
- * Instructor's Resource Disc: PDFs of *The Ultimate Guide to Teaching Economics,* PowerPoints (enhanced lecture slides, active teaching slides, Snapshot slides, art slides, art .jpegs)
- ★ Office Hours video tutorial DVD

dirkmateer.com

Visit dirkmateer.com to find a library of over 100 recommended movie and TV clips, and links to online video sources to use in class.

Coming for Fall 2014: Norton SmartWork for *Principles of Economics*

Norton SmartWork is a complete learning environment and online homework course designed to (1) support and encourage the development of problem-solving skills, and (2) deliver a suite of innovative tutorials, learning tools, and assessment woven together in a pedagogically effective way. Highlights include:

- * Pre-created assignments to help instructors get started quickly and easily
- * Guided learning tutorials to help students review each chapter objective
- * Answer-specific feedback for every question to help students become better problem solvers
- * An intuitive, easy-to-use graphing tool consistent with the coloration and notation of in-text graphs and art

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Principles of Economics