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Macroeconomics

A Contemporary Introduction

William A. McEachern

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William A. McEachern

University of Connecticut



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**Macroeconomics: A Contemporary
Introduction, 10e****William A. McEachern**

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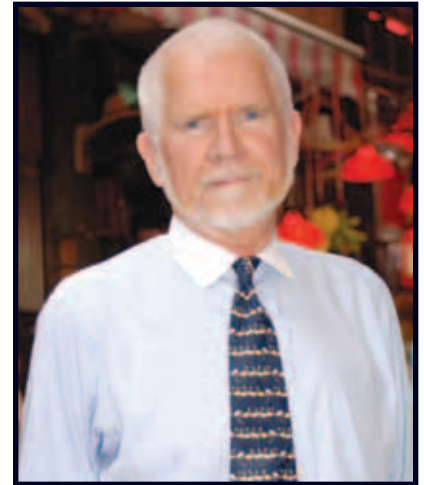
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About the Author



William A. McEachern started teaching large sections of economic principles shortly after joining the University of Connecticut. In 1980, he began offering teaching workshops around the country, and, in 1990, he created *The Teaching Economist*, a newsletter that focuses on making teaching more effective and more fun.

His research in public finance, public policy, and industrial organization has appeared in a variety of journals, including *Economic Inquiry*, *National Tax Journal*, *Journal of Industrial Economics*, *Quarterly Review of Economics and Finance*, *Southern Economic Journal*, and *Public Choice*. His books and monographs include *Managerial Control and Performance* (D.C. Heath), *School Finance Reform* (CREUES), and *Tax-Exempt Property and Tax Capitalization in Metropolitan Areas* (CREUES). He has also contributed chapters to edited volumes such as *Rethinking Economic Principles* (Irwin Publishing), *Impact Evaluations of Vertical Restraint Cases* (Federal Trade Commission), *Readings in Public Choice Economics* (University of Michigan Press), and *International Handbook on Teaching and Learning Economics* (Edward Elgar Publishing).



Professor McEachern has been quoted in or written for the *Times* of London, *New York Times*, *Wall Street Journal*, *Christian Science Monitor*, *USA Today*, *Challenge Magazine*, *Connection*, CBS MarketWatch.com, and *Reader's Digest*. He has also appeared on Now with Bill Moyers, Voice of America, and National Public Radio.

In 1984, Professor McEachern won the University of Connecticut Alumni Association's Faculty Award for Distinguished Public Service and in 2000 won the Association's Faculty Award for Excellence in Undergraduate Teaching. He is the only person in the university's history to receive both. He was born in Portsmouth, N.H., earned an undergraduate degree with honors from College of the Holy Cross, served three years as a U.S. Army officer, and earned an M.A. and Ph.D. from the University of Virginia.

To Pat



Brief Contents

PART 1 Introduction to Economics

1	The Art and Science of Economic Analysis	1
2	Economic Tools and Economic Systems	26
3	Economic Decision Makers	46
4	Demand, Supply, and Markets	66

PART 2 Fundamentals of Macroeconomics

5	Introduction to Macroeconomics	92
6	Tracking the U.S. Economy	113
7	Unemployment and Inflation	136
8	Productivity and Growth	161
9	Aggregate Expenditure and Aggregate Demand	184
10	Aggregate Supply	207

PART 3 Fiscal and Monetary Policy

11	Fiscal Policy	227
12	Federal Budgets and Public Policy	248
13	Money and the Financial System	270
14	Banking and the Money Supply	294
15	Monetary Theory and Policy	314
16	Macro Policy Debate: Active or Passive?	337

PART 4 International Economics

17	International Trade	359
18	International Finance	382
19	Economic Development	400



Table of Contents

PART 1 Introduction to Economics

Chapter 1

The Art and Science of Economic Analysis 1

The Economic Problem: Scarce Resources, Unlimited Wants 2

Resources 2 | Goods and Services 3 | Economic Decision Makers 5 | A Simple Circular-Flow Model 5

The Art of Economic Analysis 7

Rational Self-Interest 7 | Choice Requires Time and Information 8 | Economic Analysis Is Marginal Analysis 8 | Microeconomics and Macroeconomics 8

The Science of Economic Analysis 9

The Role of Theory 10 | The Scientific Method 10 | Normative Versus Positive 12 | Economists Tell Stories 12 | Predicting Average Behavior 13 | Some Pitfalls of Faulty Economic Analysis 13 | If Economists Are So Smart, Why Aren't They Rich? 14 | **Case Study: The Information Economy** 14

Appendix: Understanding Graphs 20

Drawing Graphs 21 | The Slope of a Straight Line 22 | The Slope, Units of Measurement, and Marginal Analysis 22 | The Slopes of Curved Lines 23 | Line Shifts 25 | Appendix Questions 25

Chapter 2

Economic Tools and Economic Systems 26

Choice and Opportunity Cost 27

Opportunity Cost 27 | **Case Study: Bringing Theory to Life** 27 | Opportunity Cost Is Subjective 29 | Sunk Cost and Choice 30

Comparative Advantage, Specialization, and Exchange 30

The Law of Comparative Advantage 31 | Absolute Advantage Versus Comparative Advantage 31 | Specialization and Exchange 32 | Division of Labor and Gains From Specialization 33

The Economy's Production Possibilities 34

Efficiency and the Production Possibilities Frontier, or PPF 34 | Inefficient and Unattainable Production 35 | The Shape of the Production Possibilities Frontier 35 | What Can Shift the Production Possibilities Frontier? 37 | What We Learn From the PPF 39

Economic Systems 39

Three Questions Every Economic System Must Answer 39 | Pure Capitalism 40 | Pure Command System 41 | Mixed and Transitional Economies 42 | Economies Based on Custom or Religion 43

Chapter 3

Economic Decision Makers 46

The Household 47

The Evolution of the Household 47 | Households Maximize Utility 47 | Households as Resource Suppliers 47 | Households as Demanders of Goods and Services 49

The Firm 49

The Evolution of the Firm 49 | Types of Firms 50 | Cooperatives 51 | Not-for-Profit Organizations 52 | **Case Study: The Information Economy** 53 | Why Does Household Production Still Exist? 54

The Government 55

The Role of Government 55 | Government's Structure and Objectives 57 | The Size and Growth of Government 58 | Sources of Government Revenue 59 | Tax Principles and Tax Incidence 60

The Rest of the World 62

International Trade 62 | Exchange Rates 62 | Trade Restrictions 63

Chapter 4

Demand, Supply, and Markets 66

Demand 67

The Law of Demand 67 | The Demand Schedule and Demand Curve 68

Shifts of the Demand Curve 70

Changes in Consumer Income 70 | Changes in the Prices of Other Goods 71 | Changes in Consumer Expectations 72 | Changes in the Number or Composition of Consumers 72 | Changes in Consumer Tastes 72

Supply 73

The Supply Schedule and Supply Curve 73

Shifts of the Supply Curve 75

Changes in Technology 75 | Changes in the Prices of Resources 75 | Changes in the Prices of Other Goods 75 | Changes in Producer Expectations 76 | Changes in the Number of Producers 76

Demand and Supply Create a Market 77

Markets 77 | Market Equilibrium 78

Changes in Equilibrium Price and Quantity 80

Shifts of the Demand Curve 80 | Shifts of the Supply Curve 81 | Simultaneous Shifts of Demand and Supply Curves 82

Disequilibrium 84

Price Floors 84 | Price Ceilings 84 | **Case Study: Bringing Theory to Life** 85

PART 2 Fundamentals of Macroeconomics

Chapter 5

Introduction to Macroeconomics	92
The National Economy	93
What's Special About the National Economy? 93 The Human Body and the U.S. Economy 94 Knowledge and Performance 95	
Economic Fluctuations and Growth	96
U.S. Economic Fluctuations 96 Leading Economic Indicators 98	
Aggregate Demand and Aggregate Supply	99
Aggregate Output and the Price Level 99 Aggregate Demand Curve 100 Aggregate Supply Curve 101 Equilibrium 101	
Brief History of the U.S. Economy	103
The Great Depression and Before 103 The Age of Keynes: After the Great Depression to the Early 1970s 104 Stagflation: 1973–1975 and 1979–1980 105 Relatively Normal Times: 1980 to 2007 106 The Great Recession of 2007–2009 and Beyond 107 Case Study: Public Policy 109	

Chapter 6

Tracking the U.S. Economy	113
The Product of a Nation	114
National Income Accounts 114 GDP Based on the Expenditure Approach 115 Composition of Aggregate Expenditure 116 GDP Based on the Income Approach 117	
Circular Flow of Income and Expenditure	118
Income Half of the Circular Flow 119 Expenditure Half of the Circular Flow 119 Leakages Equal Injections 121	
Limitations of National Income Accounting	122
Some Production Is Not Included in GDP 122 Leisure, Quality, and Variety 122 What's Gross About Gross Domestic Product? 123 GDP Does Not Reflect All Costs 123 GDP and Economic Welfare 124	
Accounting for Price Changes	124
Price Indexes 125 Consumer Price Index 125 Problems With the CPI 126 Case Study: Public Policy 127 The GDP Price Index 128 Moving From Fixed Weights to Chain Weights 129	
Appendix: National Income Accounts	133
National Income 133 Summary Income Statement of the Economy 134 Appendix Questions 135	

Chapter 7

Unemployment and Inflation	136
Unemployment: Its Measure and Sources	137
Measuring Unemployment 137 Labor Force Participation Rate 138 Unemployment Over Time 139 Duration	

of Unemployment 140 | Unemployment Among Various Groups 141 | Unemployment Varies Across Occupations and Regions 143 | International Comparisons of Unemployment 143 | Sources of Unemployment 143

Other Unemployment Issues	147
The Meaning of Full Employment 147 Unemployment Compensation 147 Problems With Official Unemployment Figures 148	
Inflation: Its Measure and Sources	149
Case Study: Bringing Theory to Life 149 Two Sources of Inflation 150 A Historical Look at Inflation and the Price Level 151 Inflation Across Metropolitan Areas 153 International Comparisons of Inflation 154	
Effects of Inflation	155
Anticipated Versus Unanticipated Inflation 155 The Transaction Costs of Variable Inflation 155 Inflation Obscures Relative Price Changes 155 Inflation and Interest Rates 156 Why Is Inflation So Unpopular? 157	

Chapter 8

Productivity and Growth	161
Theory of Productivity and Growth	162
Growth and the Production Possibilities Frontier 162 What Is Productivity? 164 Labor Productivity 165 Per-Worker Production Function 165 Technological Change 166 Rules of the Game 167	
Productivity and Growth in Practice	169
Education and Economic Development 169 U.S. Labor Productivity 170 Slowdown and Rebound in Productivity Growth 172 Output per Capita 173 International Comparisons 173	
Other Issues of Technology and Growth	176
Does Technological Change Lead to Unemployment? 176 Research and Development 177 Industrial Policy 179 Case Study: Public Policy 180	

Chapter 9

Aggregate Expenditure and Aggregate Demand	184
Consumption	185
Consumption and Income 185 The Consumption Function 186 Marginal Propensities to Consume and to Save 187 The MPC Is the Slope of the Consumption Function 187	
Nonincome Determinants of Consumption	188
Net Wealth and Consumption 188 The Price Level 190 The Interest Rate 190 Consumer Expectations 190	
Other Spending Components	191
Investment 191 Case Study: Public Policy 193 Government Purchases 194 Net Exports 195	
Aggregate Expenditure and Income	195
The Components of Aggregate Expenditure 195 Real GDP Demanded 196 What if Spending Exceeds Real GDP? 197 What if Real GDP Exceeds Spending? 197	

The Simple Spending Multiplier	198	Chapter 12	
An Increase in Spending 198 Using the Simple Spending Multiplier 199		Federal Budgets and Public Policy	248
The Aggregate Demand Curve	201	The Federal Budget Process	249
A Higher Price Level 201 A Lower Price Level 201 The Multiplier and Shifts in Aggregate Demand 203		The Presidential and Congressional Roles 250 Problems With the Federal Budget Process 250 Possible Budget Reforms 251	
Chapter 10		The Fiscal Impact of the Federal Budget	252
Aggregate Supply	207	The Rationale for Deficits 252 Budget Philosophies and Deficits 253 Federal Deficits Since the Birth of the Nation 253 Why Deficits Persist 254 Deficits, Surpluses, Crowding Out, and Crowding In 254 The Twin Deficits 255 The Short-Lived Budget Surplus 256 The Relative Size of the Public Sector 258	
Aggregate Supply in the Short Run	208	The National Debt in Perspective	259
Labor and Aggregate Supply 208 Potential Output and the Natural Rate of Unemployment 209 Actual Price Level Is Higher Than Expected 209 Why Costs Rise When Output Exceeds Potential 210 An Actual Price Level Lower Than Expected 211 The Short-Run Aggregate Supply Curve 211		Measuring the National Debt 259 International Perspective on Public Debt 260 Interest Payments on the National Debt 261	
From the Short Run to the Long Run	213	Huge Federal Debt and the Economy	262
Closing an Expansionary Gap 213 Closing a Recessionary Gap 215		Are Persistent Deficits Sustainable? 262 The Debt Ceiling and Debt Default 263 Who Bears the Burden of the Debt? 264 Crowding Out and Capital Formation 264 The National Debt and Economic Growth 265 Case Study: Public Policy 266	
The Long-Run Aggregate Supply Curve	217	Chapter 13	
Tracing Potential Output 217 Wage Flexibility and Employment 218 Case Study: Public Policy 219		Money and the Financial System	270
Shifts of the Aggregate Supply Curve	221	The Birth of Money	271
Aggregate Supply Increases 221 Decreases in Aggregate Supply 222		Barter and the Double Coincidence of Wants 271 The Earliest Money and Its Functions 272 Properties of the Ideal Money 273 Case Study: Bringing Theory to Life 274 Coins 275	
PART 3 Fiscal and Monetary Policy		Money and Banking	276
Chapter 11		Early Banking 276 Bank Notes and Fiat Money 277 The Value of Money 277 When Money Performs Poorly 278	
Fiscal Policy	227	Financial Institutions in the United States	279
Theory of Fiscal Policy	228	Commercial Banks and Thrifts 279 Birth of the Fed 279 Powers of the Federal Reserve System 281 Banking Troubles During the Great Depression 281 Banks Lost Deposits When Inflation Increased 283 Banking Deregulation 284 Banks on the Ropes 284 U.S. Banking Developments 284	
Fiscal Policy Tools 228 Discretionary Fiscal Policy to Close a Recessionary Gap 228 Discretionary Fiscal Policy to Close an Expansionary Gap 230 The Multiplier and the Time Horizon 231		Banking During and After the Great Recession of 2007–2009	287
Fiscal Policy Up to Stagflation of the 1970s	231	Subprime Mortgages and Mortgage-Backed Securities 287 Incentive Problems and the Financial Crisis of 2008 287 The Troubled Asset Relief Program 289 The Dodd-Frank Act 289 Top Banks in America and the World 290	
Prior to the Great Depression 231 The Great Depression and World War II 232 Automatic Stabilizers 232 From the Golden Age to Stagflation 233		Chapter 14	
Limits on Fiscal Policy's Effectiveness	234	Banking and the Money Supply	294
Fiscal Policy and the Natural Rate of Unemployment 234 Lags in Fiscal Policy 235 Discretionary Fiscal Policy and Permanent Income 236		Money Aggregates	295
Fiscal Policy Since 1980	236	Narrow Definition of Money: M1 295 Case Study: Public Policy 296 Broader Definition of Money: M2 297 Credit Cards and Debit Cards: What's the Difference? 297	
Fiscal Policy During the 1980s 236 1990 to 2007: From Deficits to Surpluses Back to Deficits 237 Fiscal Policy and the Great Recession 238 Case Study: Public Policy 240			
Appendix: Demand-Side Effects of Government Purchases and Net Taxes	244		
Changes in Government Purchases 244 Changes in Net Taxes 244 Summary 246 Appendix Questions 246			

How Banks Work	299	PART 4 International Economics	
Banks Are Financial Intermediaries 300 Starting a Bank 300 Reserve Accounts 302 Liquidity Versus Profitability 302		Chapter 17	
How Banks Create Money	303	International Trade	359
Creating Money through Excess Reserves 303 A Summary of the Rounds 305 Reserve Requirements and Money Expansion 306 Limitations on Money Expansion 307 Multiple Contraction of the Money Supply 307		The Gains From Trade	360
The Fed's Tools of Monetary Control	308	A Profile of Exports and Imports 360 Production Possibilities Without Trade 361 Consumption Possibilities Based on Comparative Advantage 363 Reasons for International Specialization 365	
Open-Market Operations and the Federal Funds Rate 308 The Discount Rate 309 Reserve Requirements 309 Coping With Financial Crises 310 The Fed Is a Money Machine 310		Trade Restrictions and Welfare Loss	367
Chapter 15		Consumer Surplus and Producer Surplus From Market Exchange 367 Tariffs 368 Import Quotas 370 Quotas in Practice 371 Tariffs and Quotas Compared 372 Other Trade Restrictions 372	
Monetary Theory and Policy	314	Efforts to Reduce Trade Barriers	373
The Demand and Supply of Money	315	Freer Trade by Multilateral Agreement 373 The World Trade Organization 373 Case Study: Bringing Theory to Life 374 Common Markets 375	
The Demand for Money 315 Money Demand and Interest Rates 316 The Supply of Money and the Equilibrium Interest Rate 316		Arguments for Trade Restrictions	376
Money and Aggregate Demand in the Short Run	318	National Defense Argument 376 Infant Industry Argument 377 Antidumping Argument 377 Jobs and Income Argument 377 Declining Industries Argument 378 Problems With Trade Protection 379	
Interest Rates and Investment 318 Adding the Short-Run Aggregate Supply Curve 320 Recent History of the Federal Funds Rate 322 Case Study: Public Policy 323		Chapter 18	
Money and Aggregate Demand in the Long Run	324	International Finance	382
The Equation of Exchange 325 The Quantity Theory of Money 325 What Determines the Velocity of Money? 327 How Stable Is Velocity? 327		Balance of Payments	383
Targets for Monetary Policy	329	International Economic Transactions 383 The Merchandise Trade Balance 383 Balance on Goods and Services 385 Net Investment Income 385 Unilateral Transfers and the Current Account Balance 386 The Financial Account 386 Deficits and Surpluses 387	
Contrasting Policies 329 Targets Before 1982 330 Targets After 1982 331 Other Fed Responses to the Financial Crisis 331 What About Inflation? 333 International Considerations 334		Foreign Exchange Rates and Markets	388
Chapter 16		Foreign Exchange 388 The Demand for Foreign Exchange 389 The Supply of Foreign Exchange 390 Determining the Exchange Rate 391	
Macro Policy Debate: Active or Passive?	337	Other Factors Influencing Foreign Exchange Markets	392
Active Policy Versus Passive Policy	338	Arbitrageurs and Speculators 392 Purchasing Power Parity 393 Case Study: Bringing Theory to Life 393 Flexible Exchange Rates 395 Fixed Exchange Rates 395	
Closing a Recessionary Gap 338 Closing an Expansionary Gap 340 Problems With Active Policy 341 The Problem of Lags 341 A Review of Policy Perspectives 343		Development of the International Monetary System	396
The Role of Expectations	343	The Bretton Woods Agreement 396 The Demise of the Bretton Woods System 397 The Current System: Managed Float 397	
Discretionary Policy and Inflation Expectations 344 Anticipating Policy 345 Policy Credibility 347 Case Study: Public Policy 348		Chapter 19	
Policy Rules Versus Discretion	349	Economic Development	400
Limitations on Discretion 349 Rules and Rational Expectations 350		Worlds Apart	401
The Phillips Curve	351	Developing and Industrial Economies 402 Health and Nutrition 402 High Birth Rates 404 Women in Developing Countries 406	
The Phillips Framework 352 The Short-Run Phillips Curve 353 The Long-Run Phillips Curve 354 The Natural Rate Hypothesis 355 Evidence of the Phillips Curve 355			



Preface

Economics has a short history but a long past. As a distinct discipline, economics has been around for only a few hundred years, yet civilizations have confronted the economic problem of scarce resources and unlimited wants for millennia. Economics, the discipline, may be centuries old, but it's new every day, with fresh evidence that refines and extends economic theory. What could be newer than the financial crisis, the Great Recession, and the policy responses to them? In this edition of *Macroeconomics: A Contemporary Introduction*, I draw on more than three decades of teaching and research to convey the vitality, timeliness, and relevance of economics.

Lead by Example

Remember the last time you were in unfamiliar parts and had to ask for directions? Along with the directions came the standard comment, “You can’t miss it!” So how come you missed it? Because the “landmark,” so obvious to locals, was invisible to you, a stranger. Writing a principles textbook is much like giving directions. Familiarity is a must, but that very familiarity can cloud the author’s ability to see the material through the fresh eyes of a new student. One could revert to a tell-all approach, but that will bury students in information. An alternative is to opt for the minimalist approach, writing abstractly about good x and good y , units of labor and units of capital, or the proverbial widget. But that shorthand turns economics into a foreign language.

Good directions rely on landmarks familiar to us all—a stoplight, a fork in the road, a white picket fence. Likewise, a good textbook builds bridges from the familiar to the new. That’s what I try to do—*lead by example*. By beginning with examples that draw on common experience, I try to create graphic images that need little explanation, thereby eliciting from the reader that light of recognition, that “Aha!” I believe that the shortest distance between an economic principle and student comprehension is a lively example. Examples should convey the point quickly and directly. Having to explain an example is like having to explain a joke—the point gets lost. Throughout the book, I try to provide just enough intuition and institutional detail to get the point across. My emphasis is on economic ideas, not economic jargon.

Students show up the first day of class with at least 17 years of experience with economic choices, economic institutions, and economic events. Each grew up in a household—the most important economic institution in a market economy. As consumers, students become well acquainted with fast-food outlets, cineplexes, car dealerships, online retailers, and scores of stores at the mall. Most students have supplied labor to the job market—more than half had jobs in high school. Students also have interacted with government—they know about sales taxes, driver’s licenses, speed limits, public schools, and laws about texting while driving. And students have a growing familiarity with the rest of the world. Thus, students have abundant experience with economics. This rich lode of personal experience offers a perfect starting point. Rather than try to create for students a new world of economics—a new way of thinking, my approach is to build on student experience—on what Alfred Marshall called “the ordinary business of life.” I frequently remind students how much they already know.

This book starts with what students bring to the party. For example, to explain resource substitution, rather than rely on abstract units of labor and capital, I begin with washing a car, where the mix can vary from a drive-through car wash (much capital and little labor) to a Saturday morning charity car wash (much labor and little capital). Down-to-earth examples turn the abstract into the concrete to help students remember and learn. Because instructors can cover only a portion of a textbook in the classroom, material should be self-contained and self-explanatory. This gives instructors the flexibility to emphasize in class topics of special interest.

What's New With the Tenth Edition

This edition builds on previous success with additional examples, more questions along the way, and frequent summaries as a chapter unfolds. By making the material both more natural and more personal, I try to engage students in a collaborative discussion. Chapters have been streamlined for a clearer, more intuitive presentation, with fresh examples, new or revised case studies, and additional exhibits to crystallize key points.

Recent research suggests that students learn best by trying to recall what they have just read. In that spirit, I now pose “Checkpoint” questions after each section of a chapter. And to help students grasp the material, I also break down each chapter into at least four sections (some chapters in the previous edition had as few as two). This does not make chapters longer, just more manageable (in fact, this edition is about five percent shorter than the previous edition).

In terms of overarching themes, this revision emphasizes the Great Recession and policy responses to it. These topics get extensive coverage in the macroeconomic chapters, but I now introduce the idea of macroeconomic fluctuations in Chapter 1. That way, I can bring the recession to the forefront in the introductory chapters (Chapters 1–4). Throughout the book, I add timely examples from issues swirling around the recession.

It goes without saying that all data have been revised to reflect the most recent figures available. Time sensitive examples and discussions have also been updated. To make economic principles richer and more interesting, this edition places greater emphasis on recent research. Nearly 150 recent studies are discussed and cited. In the following summary of revisions by chapter, some examples offer you a feel for these findings.

INTRODUCTORY CHAPTERS: 1–4

As with earlier editions, topics common to both macro- and microeconomics are covered in the first four chapters. Limiting introductory material to four chapters saves precious class time, particularly at those institutions where students can take macro and micro courses in either order (and so must cover introductory chapters twice). New or revised features in the introductory chapters include:

Ch. 1: *The Art and Science of Economic Analysis* This chapter provides more detail on the implications of rational self-interest. For example, in the *USA Today* football poll, coaches distort their selections to favor their own teams and their own conferences. And, to make their own records look better, they inflate the rank of teams they have beaten.

Ch. 2: *Economic Tools and Economic Systems* To help explain opportunity cost, I quote Lady Macbeth: “Things without all remedy should be without regard: what’s done is done.” In explaining economic systems, I add to the list of failures of central planning and of a market economy.

Ch. 3: *Economic Decision Makers* Unlike other principles books, I discuss the role of cooperatives, such as Sunkist, and the not-for-profit sector more generally, such as Houston's Texas Medical Center, which employs more than 60,000 people.

Ch.4: *Demand, Supply, and Markets* In explaining the effect of a price change on quantity demanded, I note that the more important the item is as a share of the consumer's budget, the bigger the income effect. That's why, for example, some consumers cut back on a variety of purchases when the price of gasoline spikes, as it did in 2012.

MACROECONOMIC CHAPTERS: 5-16

Rather than focus on the differences among competing schools of thought, I use the aggregate demand and aggregate supply model to underscore the fundamental distinction between the *active approach*, which views the economy as unstable and in need of government intervention when it gets off track, and the *passive approach*, which views the economy as essentially stable and self-correcting. Again, all macro data have been updated to reflect the most recent figures available. Equilibrium values for real GDP and the price level used in theoretical models throughout the macro chapters match actual values prevailing in the U.S. economy. Wherever possible, I rely on student experience and intuition to help explain macroeconomic abstractions such as aggregate demand and aggregate supply. For example, to explain how employment can temporarily exceed its natural rate, I note how students, as the term draws to a close, can temporarily shift into high gear, studying for exams and finishing term papers. To reinforce the link between income and consumption, I point out how easy it is to figure out the relative income of a neighborhood just by driving through it. And to offer students a feel for the size of the federal budget, I note that if all 4.6 thousand tons of gold stored in Fort Knox could be sold at prevailing prices, the proceeds would run the federal government for less than three weeks.

New or revised features in the macroeconomics chapters include:

Ch. 5: *Introduction to Macroeconomics* I introduce the concept of gross world product. As a point of reference, the gross world product was estimated to be about \$80 trillion in 2011, up 3.6 percent from the year before. U.S. production accounts for nearly 20 percent of gross world product.

Ch. 6: *Tracking the U.S. Economy* Some recent research suggests that the external costs of oil and coal-fired electricity generation could exceed the value added by these firms.

Ch. 7: *Unemployment and Inflation* I note that while the unemployment rate is lower among college graduates, timing is important. Research suggests that those who graduate from college during a recession not only have a harder time finding that first job, their job opportunities can be diminished for years.

Ch. 8: *Productivity and Growth* As part of my greater emphasis on the rules of the game—that is, on the institutional setting—I report on a recent finding that economies grow faster if people are more trusting and more trustworthy. After all, one sign of an advanced economy is a willingness to participate in impersonal market exchange.

Ch. 9: *Aggregate Expenditure and Aggregate Demand* This chapter now combines what had been Chapters 9 and 10 in the previous edition. This way I develop a more direct path to aggregate demand. I discuss the impact of declining home values and stock market prices on consumption.

Ch. 10: *Aggregate Supply* I discuss the impact of the Great Recession on the natural rate of unemployment.

Ch. 11: *Fiscal Policy* Most studies that have tried to estimate a government spending multiplier have found it to be disappointingly small. The section looking at the effects of shifts of aggregate expenditure line has been moved to the chapter's appendix.

Ch. 12: *Federal Budgets and Public Policy* Given the current state of the federal budget, this may now be the most important macroeconomic chapter. I explain why, at some point, a giant federal debt could cripple the economy. I remind students that they will some day inherit liability for the federal debt, so they should have a particular interest in this material.

Ch. 13: *Money and the Financial System* An exhibit shows that China is now home to four of the world's ten largest banks. France and the United Kingdom have two each in the top ten. While the United States may have some financial institutions considered "too big to fail," no U.S. bank ranks among the world's ten largest.

Ch. 14: *Banking and the Money Supply* A new exhibit ranks the various means of payment in the economy based first by the number of transactions and second by the dollar value of transactions. Debit cards are the rising stars in each category. Also, in this chapter, the Fed's balance sheet is used as a guide to Fed actions in recent years.

Ch. 15: *Monetary Theory and Policy* New terms considered important enough to be boldfaced and defined in the margin include the "shadow banking system" and "quantitative easing." A section discusses why the \$2 trillion expansion of the Fed's balance sheet has not yet triggered higher inflation.

Ch. 16: *Macro Policy Debate: Active or Passive* I draw on quotes from the Fed chairman to assess how recent Fed actions affect the institution's credibility. I also offer more detail on what has happened to the natural rate of unemployment.

INTERNATIONAL CHAPTERS: 17–19

This edition reflects the growing impact of the world economy on U.S. economic welfare. International issues are introduced early and discussed often. For example, the rest of the world is introduced in Chapter 1 and profiled in Chapter 3. Comparative advantage and the production possibilities frontier are discussed from a global perspective in Chapter 2. International coverage is woven throughout the text. By comparing the U.S. experience with that of other countries around the world, students gain a better perspective about such topics as unionization trends, antitrust policies, pollution, conservation, environmental laws, tax rates, the distribution of income, economic growth, productivity, unemployment, inflation, central bank independence, government spending, and federal debt. Exhibits show comparisons across countries of various economic measures—everything from Internet users as a percentage of the population to public outlays relative to GDP. International references are scattered throughout the book, including a number of relevant case studies.

Again, every effort is made to give students a feel for the numbers. For example, to convey the importance of U.S. consumers in the world economy, I note that Americans represent less than 5 percent of the world's population, but they buy half the diamonds sold worldwide. New or revised features in the international chapters include:

Ch. 17: *International Trade* People prefer having a choice of products, and international trade helps broaden that choice. Yet another benefit of international trade is that trading partners are less likely to go to war because war with trading partners would involve more economic loss.

Ch. 18: *International Finance* Foreigners find America an attractive place to invest because U.S. capital markets are the deepest and most liquid in the world. Fiscal problems in euro-zone nations such as Greece and Spain have taken some of the shine off the euro.

Ch. 19: *Economic Development* All exhibits in this chapter offering cross-country comparisons of economic development now include the world average for each measure.

STUDENT-FRIENDLY FEATURES

In some principles textbooks, chapters are broken up by boxed material, qualifying footnotes, and other distractions that disrupt the flow of the material. Students aren't sure when or if they should read such segregated elements. But this book has a natural flow. Each chapter opens with a few off-beat questions and then follows with a logical narrative. Case studies appear in the natural sequence of the chapter, not as separate boxes. Students can thus read each chapter from the opening questions to the conclusion and summary. I also adhere to a “just-in-time” philosophy, introducing material just as it's needed to build an argument. Footnotes are used only to cite sources, not to qualify or extend material in the text.

This edition is more visual than its predecessors, with more exhibits to reinforce key findings. Exhibit titles convey the central points, and more exhibits now have summary captions. Captions have been edited for clarity and brevity. The point is to make the exhibits more self-contained. Students learn more if concepts are presented both in words and in exhibits. Additional summary paragraphs have been added throughout each chapter; these summaries begin with the bold-faced identifier “**To Review.**” As noted earlier, each section now is followed by “Checkpoint” questions. Economic jargon has been reduced. Although the number of terms defined in the margin has increased modestly, definitions have been pared to make them clearer and less like entries from a dictionary. In short, economic principles are now more transparent (a textbook should not be like some giant Easter egg hunt, where it's up to the student to figure out what the author is trying to say). Overall, the tenth edition is a cleaner presentation, a straighter shot into the student's brain. This edition is about five percent shorter than the ninth edition.

Color is used systematically within graphs, charts, and tables to ensure that students can easily see what's going on. Throughout the book, demand curves are blue and supply curves are red. Color shading distinguishes key areas of many graphs, and color identifies outcomes in others. For example, economic profit and welfare gains are always shaded blue and economic loss and welfare losses are always shaded pink. In short, color is more than mere eye candy—it is coordinated consistently and with forethought to help students learn (a dyslexic student once told me she found the book's color guide quite helpful). Students benefit from these visual cues.

THE MCEACHERN TEXT *Web site* (www.cengage.com/economics/mceachern). The Web site designed to be used with this textbook provides chapter-by-chapter online study aids that include a glossary and quizzing, among others.

The Support Package

The teaching and learning support package that accompanies *Economics: A Contemporary Introduction* provides instructors and students with focused, accurate, and innovative supplements to the textbook.

INSTRUCTOR'S MANUAL The *Instructor's Manual* is revised by Jana Cook, Oklahoma Christian University. The manual provides chapter outlines, teaching ideas, experiential exercises for many chapters, and solutions to all end-of-chapter problems.

INSTRUCTOR RESOURCES ON THE PRODUCT SUPPORT WEB SITE. This site at <http://login.cengage.com> features the essential resources for instructors, password protected, in downloadable format: the *Instructor's Manual in Word*, the test banks in Word, and PowerPoint lecture and exhibit slides.

TEACHING ASSISTANCE MANUAL Written and revised by me, the *Teaching Assistance Manual* provides additional support beyond the *Instructor's Manual*. It is especially useful to new instructors, graduate assistants, and teachers interested in generating more class discussion. This manual offers (1) overviews and outlines of each chapter, (2) chapter objectives and quiz material, (3) material for class discussion, (4) topics warranting special attention, (5) supplementary examples, and (6) “What if?” discussion questions. Appendices provide guidance on (1) presenting material; (2) generating and sustaining class discussion; (3) preparing, administering, and grading quizzes; and (4) coping with the special problems confronting foreign graduate assistants.

TEST BANKS Thoroughly revised for currency and accuracy by Kenneth Slaysman, York College of Pennsylvania, the microeconomics and macroeconomics test banks contain over 6,600 questions in multiple-choice and true-false formats. All multiple-choice questions are rated by degree of difficulty, and are labeled with learning outcomes tags.

EXAMVIEW—COMPUTERIZED TESTING SOFTWARE *ExamView* is an easy-to-use test-creation software package available in versions compatible with Microsoft Windows and Apple Macintosh. It contains all the questions in the printed test banks. Instructors can add or edit questions, instructions, and answers; select questions by previewing them on the screen; and then choose them by number or at random. Instructors can also create and administer quizzes online, either over the Internet, through a local area network (LAN), or through a wide area network (WAN).

MICROSOFT POWERPOINT LECTURE SLIDES Lecture slides revised by Andreea Chiritescu of Eastern Illinois University, contain tables and graphs from the textbook, and are intended to enhance lectures and help integrate technology into the classroom.

MICROSOFT POWERPOINT FIGURE SLIDES These PowerPoint slides contain key figures from the text. Instructors who prefer to prepare their own lecture slides can use these figures as an alternative to the text's PowerPoint lecture slides.

THE TEACHING ECONOMIST Since 1990, I have edited *The Teaching Economist*, a newsletter aimed at making teaching more interesting and more fun. The newsletter discusses imaginative ways to present topics—for example, how to “sensationalize” economic concepts, useful resources on the Internet, economic applications from science fiction, recent research in teaching and learning, and more generally, ways to teach just for the fun of it. A regular feature of *The Teaching Economist*, “The Grapevine,” offers teaching ideas suggested by colleagues from across the country. The latest issue—and back issues—of *The Teaching Economist* are available online at cengage.com/economics/meachern/theteachingeconomist.

APLIA Started in 2000 by economist and instructor Paul Romer, more students are currently using an Aplia Integrated Textbook Solution for principles of economics than are using all other web-based learning programs combined. Because the assignments in Aplia are automatically graded, you can assign homework more frequently to ensure your students are putting forth a full effort and getting the most out of your class. Assignments are closely tied to the text and each McEachern Aplia course has a digital edition of the textbook embedded right in the Aplia program. This digital text is now in the Aplia Text format, which gives students the same interactive experience they get on Web sites they use in their personal lives.

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William A. McEachern

THE ART AND SCIENCE OF ECONOMIC ANALYSIS

1



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- Why are comic-strip and TV characters like *Foxtrot*, *The Simpsons*, and *Family Guy* missing a finger on each hand?
- Why do the kids on *South Park* have hands that look like mittens? And where is *Dilbert's* mouth?
- Which college majors have the most pay right after college and during mid-career?
- In what way are people who pound on vending machines relying on theory?
- Why is a good theory like a California Closet?
- What's the big idea with economics?
- Finally, how can it be said that in economics "what goes around comes around"?

These and other questions are answered in this chapter, which introduces the art and science of economic analysis.

You have been reading and hearing about economic issues for years—unemployment, inflation, poverty, recessions, federal deficits, college tuition, airfares, stock prices, computer prices,

gas prices. When explanations of such issues go into any depth, your eyes may glaze over and you may tune out, the same way you do when a weather forecaster tries to provide an in-depth analysis of high-pressure fronts colliding with moisture carried in from the coast.

What many people fail to realize is that economics is livelier than the dry accounts offered by the news media. Economics is about making choices, and you make economic choices every day—choices about whether to get a part-time job or focus on your studies, live in a dorm or off campus, take a course in accounting or one in history, get married or stay single, pack a lunch or buy a sandwich. You already know much more about economics than you realize. You bring to the

subject a rich personal experience, an experience that will be tapped throughout the book to reinforce your understanding of the basic ideas.

Topics discussed include:

- The economic problem
- Marginal analysis
- Rational self-interest
- Scientific method
- Normative versus positive analysis
- Pitfalls of economic thinking

1-1 *The Economic Problem: Scarce Resources, Unlimited Wants*

Would you like a new car, a nicer home, better meals, more free time, a more interesting social life, more spending money, more leisure, more sleep? Who wouldn't? But even if you can satisfy some of these desires, others keep popping up. *The problem is that, although your wants, or desires, are virtually unlimited, the resources available to satisfy these wants are scarce.* A resource is *scarce* when it is not freely available—that is, when its price exceeds zero. Because resources are scarce, you must choose from among your many wants, and whenever you choose, you must forgo satisfying some other wants. The problem of scarce resources but unlimited wants exists to a greater or lesser extent for each of the 7 billion people on earth. Everybody—cab driver, farmer, brain surgeon, dictator, shepherd, student, politician—faces the problem. For example, a cab driver uses time and other scarce resources, such as the taxi, knowledge of the city, driving skills, and gasoline, to earn income. That income, in turn, buys housing, groceries, clothing, trips to Disney World, and thousands of other goods and services that help satisfy some of the driver's unlimited wants. **Economics** examines how people use their scarce resources to satisfy their unlimited wants. Let's pick apart the definition, beginning with resources, then goods and services, and finally focus on the heart of the matter—economic choice, which results from scarcity.

economics

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

resources

The inputs, or factors of production, used to produce the goods and services that people want; resources consist of labor, capital, natural resources, and entrepreneurial ability

labor

The physical and mental effort used to produce goods and services

capital

The buildings, equipment, and human skills used to produce goods and services

1-1a RESOURCES

Resources are the inputs, or factors of production, used to produce the goods and services that people want. *Goods and services are scarce because resources are scarce.* Resources sort into four broad categories: labor, capital, natural resources, and entrepreneurial ability. **Labor** is human effort, both physical and mental. Labor includes the effort of the cab driver and the brain surgeon. Labor itself comes from a more fundamental resource: *time*. Without time we can accomplish nothing. We allocate our time to alternative uses: We can *sell* our time as labor, or we can *spend* our time doing other things, like sleeping, eating, studying, playing sports, going online, attending class, watching TV, or just relaxing with friends.

Capital includes all human creations used to produce goods and services. Economists often distinguish between physical capital and human capital. *Physical capital* consists of factories, tools, machines, computers, buildings, airports, highways, and other human creations used to produce goods and services. Physical capital includes the cab

driver's taxi, the surgeon's scalpel, and the building where your economics class meets (or, if you are taking this course online, your computer and online connectors). *Human capital* consists of the knowledge and skill people acquire to increase their productivity, such as the cab driver's knowledge of city streets, the surgeon's knowledge of human anatomy, and your knowledge of economics.

Natural resources include all *gifts of nature*, such as bodies of water, trees, oil reserves, minerals, even animals. Natural resources can be divided into renewable resources and exhaustible resources. A *renewable resource* can be drawn on indefinitely if used conservatively. Thus, timber is a renewable resource if felled trees are replaced to regrow a steady supply. The air and rivers are renewable resources if they are allowed sufficient time to cleanse themselves of any pollutants. More generally, biological resources like fish, game, livestock, forests, rivers, groundwater, grasslands, and soil are renewable if managed properly. An *exhaustible resource*—such as oil or coal—does not renew itself and so is available in a limited amount. Once burned, each barrel of oil or ton of coal is gone forever. The world's oil and coal deposits are exhaustible.

A special kind of human skill called **entrepreneurial ability** is the talent required to dream up a new product or find a better way to produce an existing one. This special skill comes from an entrepreneur. An **entrepreneur** is a profit-seeking decision maker who starts with an idea, organizes an enterprise to bring that idea to life, and then assumes the risk of operation. An entrepreneur pays resource owners for the opportunity to employ their resources in the firm. Every firm in the world today, such as Ford, Microsoft, Google, and Facebook, began as an idea in the mind of an entrepreneur.

Resource owners are paid **wages** for their labor, **interest** for the use of their capital, and **rent** for the use of their natural resources. Entrepreneurial ability is rewarded by **profit**, which equals the *revenue* from items sold minus the *cost* of the resources employed to make those items. The word *profit* comes from the Latin *proficere*, which means “to benefit.” The entrepreneur benefits from what's left over after paying other resource suppliers. Sometimes the entrepreneur suffers a loss. Resource earnings are usually based on the *time* these resources are employed. Resource payments therefore have a time dimension, as in a wage of \$10 *per hour*, interest of 6 percent *per year*, rent of \$600 *per month*, or profit of \$10,000 *per year*.

1-1b GOODS AND SERVICES

Resources are combined in a variety of ways to produce goods and services. A farmer, a tractor, 50 acres of land, seeds, and fertilizer combine to grow the good: corn. One hundred musicians, musical instruments, chairs, a conductor, a musical score, and a music hall combine to produce the service: Beethoven's *Fifth Symphony*. Corn is a **good** because it is something you can see, feel, and touch; it requires scarce resources to produce; and it satisfies human wants. The book you are now holding, the chair you are sitting in, the clothes you are wearing, and your next meal are all goods. The performance of the *Fifth Symphony* is a **service** because it is intangible, yet it uses scarce resources to satisfy human wants. Lectures, movies, concerts, phone service, wireless connections, yoga lessons, dry cleaning, and haircuts are all services.

Because goods and services are produced using scarce resources, they are themselves scarce. A *good or service is scarce if the amount people desire exceeds the amount available at a zero price*. Because we cannot have all the goods and services we would like, we must continually choose among them. We must choose among more pleasant living quarters, better meals, nicer clothes, more reliable transportation, faster computers, and so on. Making choices in a world of **scarcity** means we must pass up some goods and services. Exhibit 1 shows the options of one individual facing scarcity. But not

natural resources

All gifts of nature used to produce goods and services; includes renewable and exhaustible resources

entrepreneurial ability

The imagination required to develop a new product or process, the skill needed to organize production, and the willingness to take the risk of profit or loss

entrepreneur

A profit-seeking decision maker who starts with an idea, organizes an enterprise to bring that idea to life, and assumes the risk of the operation

wages

Payment to resource owners for their labor

interest

Payment to resource owners for the use of their capital

rent

Payment to resource owners for the use of their natural resources

profit

Reward for entrepreneurial ability; sales revenue minus resource cost

good

A tangible product used to satisfy human wants

service

An activity, or intangible product, used to satisfy human wants

scarcity

Occurs when the amount people desire exceeds the amount available at a zero price

EXHIBIT 1**Scarcity Means You Must Choose Among Options**

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everything is scarce. In fact, some things we would prefer to have less of. For example, we would prefer to have less garbage, less spam email, and less pollution. Things we want none of even at a zero price are called *bads*, the opposite of goods.

A few goods and services seem *free* because the amount available at a zero price exceeds the amount people want. For example, air and seawater often seem free because we can breathe all the air we want and have all the seawater we can haul away. Yet, despite the old saying “The best things in life are free,” most goods and services are scarce, not free, and even those that appear to be free come with strings attached. For example, *clean* air and *clean* seawater have become scarce. *Goods and services that are truly free are not the subject matter of economics. Without scarcity, there would be no economic problem and no need for prices.*

Sometimes we mistakenly think of certain goods as free because they involve no apparent cost to us. Napkins seem to be free at Starbucks. Nobody stops you from taking a fistful. Supplying napkins, however, costs the company millions each year and prices reflect that cost. Some restaurants make special efforts to keep napkin use down—such as packing them tightly into the dispenser or making you ask for them. And Starbucks recently reduced the thickness of its napkins.

You may have heard the expression “There is no such thing as a free lunch.” There is no free lunch because all goods and services involve a cost to someone. The lunch may seem free to you, but it draws scarce resources away from the production of other goods and services, and whoever provides a free lunch often expects something in return. A Russian proverb makes a similar point but with a bit more bite: “The only place you find free cheese is in a mousetrap.” Albert Einstein once observed, “Sometimes one pays the most for things one gets for nothing.”

1-1c ECONOMIC DECISION MAKERS

There are four types of decision makers in the economy: households, firms, governments, and the rest of the world. Their interaction determines how an economy's resources are allocated. *Households* play the starring role. As consumers, households demand the goods and services produced. As resource owners, households supply labor, capital, natural resources, and entrepreneurial ability to firms, governments, and the rest of the world. *Firms, governments, and the rest of the world* demand the resources that households supply and then use these resources to supply the goods and services that households demand. The rest of the world includes foreign households, foreign firms, and foreign governments that supply resources and products to U.S. markets and demand resources and products from U.S. markets.

Markets are the means by which buyers and sellers carry out exchange. By bringing together the two sides of exchange, markets determine price, quantity, and quality. Markets are often physical places, such as supermarkets, department stores, shopping malls, or yard sales. But markets also include other mechanisms by which buyers and sellers communicate, such as classified ads, radio and television ads, telephones, bulletin boards, online sites, and face-to-face bargaining. These market mechanisms provide information about the quantity, quality, and price of products offered for sale. Goods and services are bought and sold in **product markets**. Resources are bought and sold in **resource markets**. The most important resource market is the labor, or job, market. Think about your own experience looking for a job, and you'll already have some idea of that market.

market

A set of arrangements by which buyers and sellers carry out exchange at mutually agreeable terms

product market

A market in which a good or service is bought and sold

resource market

A market in which a resource is bought and sold

1-1d A SIMPLE CIRCULAR-FLOW MODEL

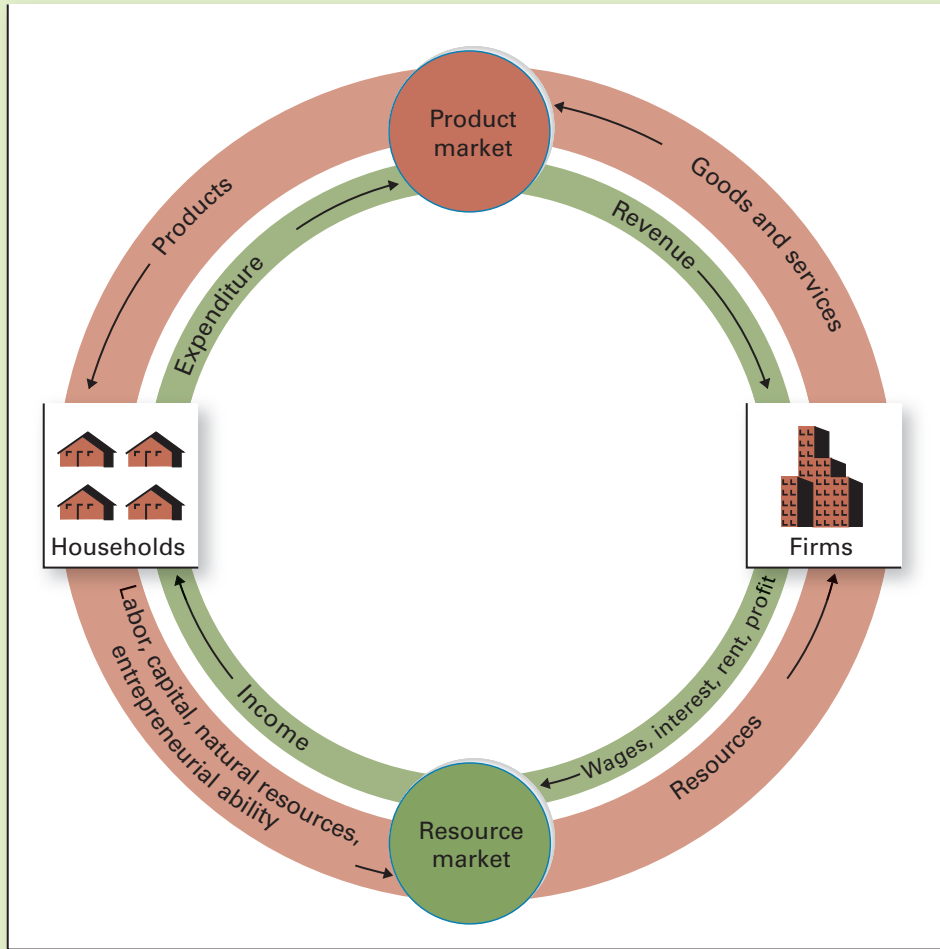
Now that you have learned a bit about economic decision makers, consider how they interact. Such a picture is conveyed by the **circular-flow model**, which describes the flow of resources, products, income, and revenue among economic decision makers. The simple circular-flow model focuses on the primary interaction in a market economy—that between households and firms. Exhibit 2 shows households on the left and firms on the right; please take a look.

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

The flows of resources and products are supported by the flows of income and expenditure—that is, by the flow of money. So let's add money. The demand and supply of resources come together in resource markets to determine what firms pay for resources. These resource prices—wages, interest, rent, and profit—flow as *income* to households. The demand and supply of products come together in product markets to determine what households pay for goods and services. These product prices of goods and services flow as *revenue* to firms. Resources and products flow in one direction—in this case, counterclockwise—and the corresponding payments flow in the other direction—clockwise. What goes around comes around. Take a little time now to trace the logic of the circular flows.

circular-flow model

A diagram that traces the flow of resources, products, income, and revenue among economic decision makers

EXHIBIT 2**The Simple Circular-Flow Model for Households and Firms**

Households earn income by supplying resources to the resource market, as shown in the lower portion of the model. Firms demand these resources to produce goods and services, which they supply to the

product market, as shown in the upper portion of the model. Households spend their income to demand these goods and services. This spending flows through the product market as revenue to firms.

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**CHECKPOINT**

Identify and describe the movement of resources and products through the circular-flow model.

1-2 *The Art of Economic Analysis*

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

1-2a RATIONAL SELF-INTEREST

A key economic assumption is that individuals, in making choices, rationally select what they perceive to be in their best interests. By *rational*, economists mean simply that people try to make the best choices they can, given the available time and information. People may not know with certainty which alternative will turn out to be the best. They simply select the alternatives they *expect* will yield the most satisfaction and happiness. In general, **rational self-interest** means that each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit. Thus, economists begin with the assumption that people look out for their self-interest. For example, the *USA Today* weekly football poll asks coaches to list the top 25 teams in the country. It is no surprise that coaches distort their selections to favor their own teams and their own conferences. And, to make their own records look better, coaches inflate the rankings of teams they have beaten.¹

Rational self-interest should not necessarily be viewed as blind materialism, pure selfishness, or greed. We all know people who are tuned to radio station WIIFM (What's In It For Me?). For most of us, however, self-interest often includes the welfare of our family, our friends, and perhaps the poor of the world. Even so, our concern for others is influenced by our personal cost of that concern. We may readily volunteer to drive a friend to the airport on Saturday afternoon but are less likely to offer a ride if the flight departs at 6:00 A.M. When we donate clothes to an organization such as Goodwill Industries, they are more likely to be old and worn than brand new. People tend to give more to charities when their contributions are tax deductible and when contributions garner social approval in the community (as when contributor names are made public or when big donors get buildings named after them).² TV stations are more likely to donate airtime for public-service announcements during the dead of night than during prime time (in fact, 80 percent of such announcements air between 11:00 P.M. and 7:00 A.M.). In Asia some people burn money to soothe the passage of a departed loved one. But they burn fake money, not real money.

The notion of self-interest does not rule out concern for others; it simply means that concern for others is influenced by the same economic forces that affect other economic choices. *The lower the personal cost of helping others, the more help we offer.* We don't like to think that our behavior reflects our self-interest, but it usually does. As Jane Austen wrote in *Pride and Prejudice*, "I have been a selfish being all my life, in practice, though not in principle."

rational self-interest

Each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit

¹ Matthew Kotchken and Matthew Potoski, "Conflicts of Interest Distort Public Evaluations: Evidence from the Top 25 Ballots of NCAA Football Coaches," NBER Working Paper 17628 (November 2011).

² Dean Karlan and Margaret McConnell, "Hey Look at Me: The Effect of Giving Circles on Giving," NBER Working Paper 17737 (January 2012).

1-2b CHOICE REQUIRES TIME AND INFORMATION

Rational choice takes time and requires information, but time and information are themselves scarce and therefore valuable. If you have any doubts about the time and information needed to make choices, talk to someone who recently purchased a home, a car, or a personal computer. Talk to a corporate official trying to decide whether to introduce a new product, sell online, build a new factory, or buy another firm. Or think back to your own experience in choosing a college. You probably talked to friends, relatives, teachers, and guidance counselors. You likely used school catalogs, college guides, and Web sites. You may have even visited some campuses to meet the admissions staff and anyone else willing to talk. The decision took time and money, and it probably involved aggravation and anxiety.

Because information is costly to acquire, we are often willing to pay others to gather and digest it for us. College guidebooks, stock analysts, travel agents, real estate brokers, career counselors, restaurant critics, movie reviewers, specialized Web sites, and *Consumer Reports* magazine attest to our willingness to pay for information that improves our choices. As we'll see next, *rational decision makers continue to acquire information as long as the additional benefit expected from that information exceeds the additional cost of gathering it.*

1-2c ECONOMIC ANALYSIS IS MARGINAL ANALYSIS

Economic choice usually involves some adjustment to the existing situation, or status quo. Amazon.com must decide whether to add an additional line of products. The school superintendent must decide whether to hire another teacher. Your favorite jeans are on sale, and you must decide whether to buy another pair. You are wondering whether to carry an extra course next term. You just finished lunch and are deciding whether to order dessert.

Economic choice is based on a comparison of the *expected marginal benefit* and the *expected marginal cost* of the action under consideration. **Marginal** means incremental, additional, or extra. Marginal refers to a change in an economic variable, a change in the status quo. *A rational decision maker changes the status quo if the expected marginal benefit from the change exceeds the expected marginal cost.* For example, Amazon.com compares the marginal benefit expected from adding a new line of products (the additional sales revenue) with the marginal cost (the additional cost of the resources required). Likewise, you compare the marginal benefit you expect from eating dessert (the additional pleasure or satisfaction) with its marginal cost (the additional money, time, and calories).

Typically, the change under consideration is small, but a marginal choice can involve a major economic adjustment, as in the decision to quit school and find a job. For a firm, a marginal choice might mean building a plant in Mexico or even filing for bankruptcy. By focusing on the effect of a marginal adjustment to the status quo, the economist is able to cut the analysis of economic choice down to a manageable size. Rather than confront a bewildering economic reality head-on, the economist begins with a marginal choice to see how this choice affects a particular market and shapes the economic system as a whole. Incidentally, to the noneconomist, *marginal* usually means relatively inferior, as in “a movie of marginal quality.” Forget that meaning for this course and instead think of *marginal* as meaning incremental, additional, or extra.

1-2d MICROECONOMICS AND MACROECONOMICS

Although you have made thousands of economic choices, you probably seldom think about your own economic behavior. For example, why are you reading this book right

marginal

Incremental, additional, or extra; used to describe a change in an economic variable

now rather than doing something else? **Microeconomics** is the study of your economic behavior and the economic behavior of others who make choices about such matters as how much to study and how much to party, how much to borrow and how much to save, what to buy and what to sell. Microeconomics examines individual economic choices and how markets coordinate the choices of various decision makers. Microeconomics explains how price and quantity are determined in individual markets—the market for breakfast cereal, sports equipment, or used cars, for instance.

You have probably given little thought to what influences your own economic choices. You have likely given even less thought to how your choices link up with those made by millions of others in the U.S. economy to determine economy-wide measures such as total production, employment, and economic growth. **Macroeconomics** studies the performance of the economy as a whole. Whereas microeconomics studies the individual pieces of the economic puzzle, as reflected in particular markets, macroeconomics puts all the pieces together to focus on the big picture. Macroeconomics sees the forest, not the trees; the beach, not the grains of sand; and the Rose Bowl parade float, not the individual flowers.

The national economy usually grows over time, but along the way it sometimes stumbles, experiencing *recessions* in economic activity, as reflected by a decline in production, employment, and other aggregate measures. **Economic fluctuations** are the rise and fall of economic activity relative to the long-term growth trend of the economy. These fluctuations, or *business cycles*, vary in length and intensity, but they usually involve the entire nation and often other nations too. For example, the U.S. economy now produces more than four times as much as it did in 1960, despite experiencing eight recessions since then, including the Great Recession of 2007–2009.

To Review: The art of economic analysis focuses on how people use their scarce resources in an attempt to satisfy their unlimited wants. Rational self-interest guides individual choice. Choice requires time and information and involves a comparison of the expected marginal benefit and the expected marginal cost of alternative actions. Microeconomics looks at the individual pieces of the economic puzzle; macroeconomics fits the pieces together to form the big picture.



CHECKPOINT

What two measures are compared when making an economic choice?

1-3 *The Science of Economic Analysis*

Economists use scientific analysis to develop theories, or models, that help explain economic behavior. An **economic theory**, or **economic model**, is a simplification of economic reality that *is used to make predictions about the real world*. A theory, or model, such as the circular-flow model, captures the important elements of the problem under study but need not spell out every detail and interrelation. In fact, adding more details may make a theory more unwieldy and, therefore, less useful. For example, a wristwatch is a model that tells time, but a watch festooned with extra features is harder to read at a glance and is therefore less useful as a time-telling model. The world is so complex that we must simplify it to make sense of things. Store mannequins simplify

microeconomics

The study of the economic behavior in particular markets, such as that for computers or unskilled labor

macroeconomics

The study of the economic behavior of entire economies, as measured, for example, by total production and employment

economic fluctuations

The rise and fall of economic activity relative to the long-term growth trend of the economy; also called business cycles

economic theory, or economic model

A simplification of reality used to make predictions about cause and effect in the real world