

MCEACHERN

MACRO

ECON⁵

PRINCIPLES OF MACROECONOMICS



NOW WITH ECON ONLINE
\$75 US SUGGESTED RETAIL PRICE

THE

**4LTR
PRESS**

PROCESS

4LTR Press uses a Student-Tested, Faculty-Approved process to meet the unique needs of each course.

ECON Macro⁵ from 4LTR Press combines an easy-reference, paperback textbook with an innovative online experience — all at an affordable price. **ECON Macro⁵** features examples and illustrations that connect your students' 17+ years of personal experience with economic choices, institutions, and events to core economic principles. New for this edition, students can explore **ECON Macro⁵** anywhere, anytime, and on most devices with **ECON Online!**

STUDENTS SAY

Students can learn economics their way with the many resources available to them with **ECON Macro⁵** in print and online! **ECON Macro⁵** presents course content through visually-engaging chapters with relevant, real-life examples.

STUDENT RESOURCES:

- Chapter-opening questions that motivate reading and engage student interest
- End-of-chapter problems at the end of every chapter
- Tear-Out Chapter Review Cards that include key graphs from the chapter
- ECON Online, available at cengagebrain.com
 - Interactive eBook
 - Practice Quizzes
 - A personalized StudyBoard for student-created StudyBits
 - Customizable Flashcards
 - Videos that connect economic concepts to our world
 - Tutorial videos that help students see how key economic concepts are represented graphically.

INSTRUCTORS REQUIRE

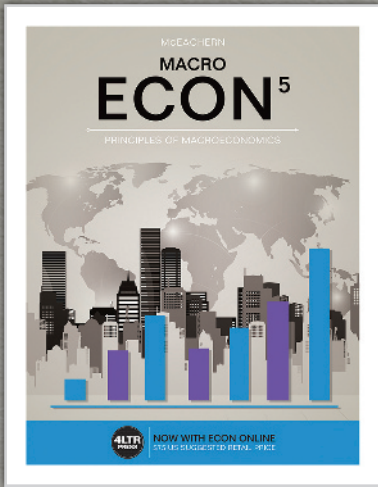
ECON Macro⁵ comes complete with an engaging print textbook, tear-out review cards, and an interactive digital solution, which offers study tools and the full text narrative, all developed through and influenced by a deep understanding of student workflow and learning styles. Shorter, comprehensive chapters in a modern design present content in a more engaging and accessible format, which encourages student reading without minimizing coverage for your course.

INSTRUCTOR RESOURCES

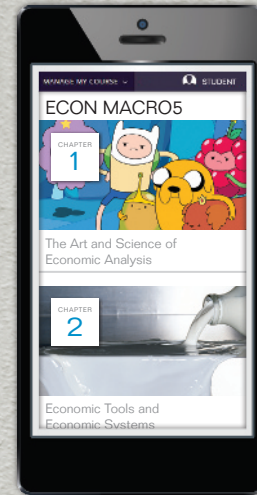
AVAILABLE AT CENGAGE.COM/LOGIN:

- All Student Resources
- Assignable Chapter Readings and Assessments
- LMS Integration
- Instructional Tips and Activities
- Test Bank
- PowerPoint® Slides
- Instructor Prep Cards

THE **ECON** SOLUTION



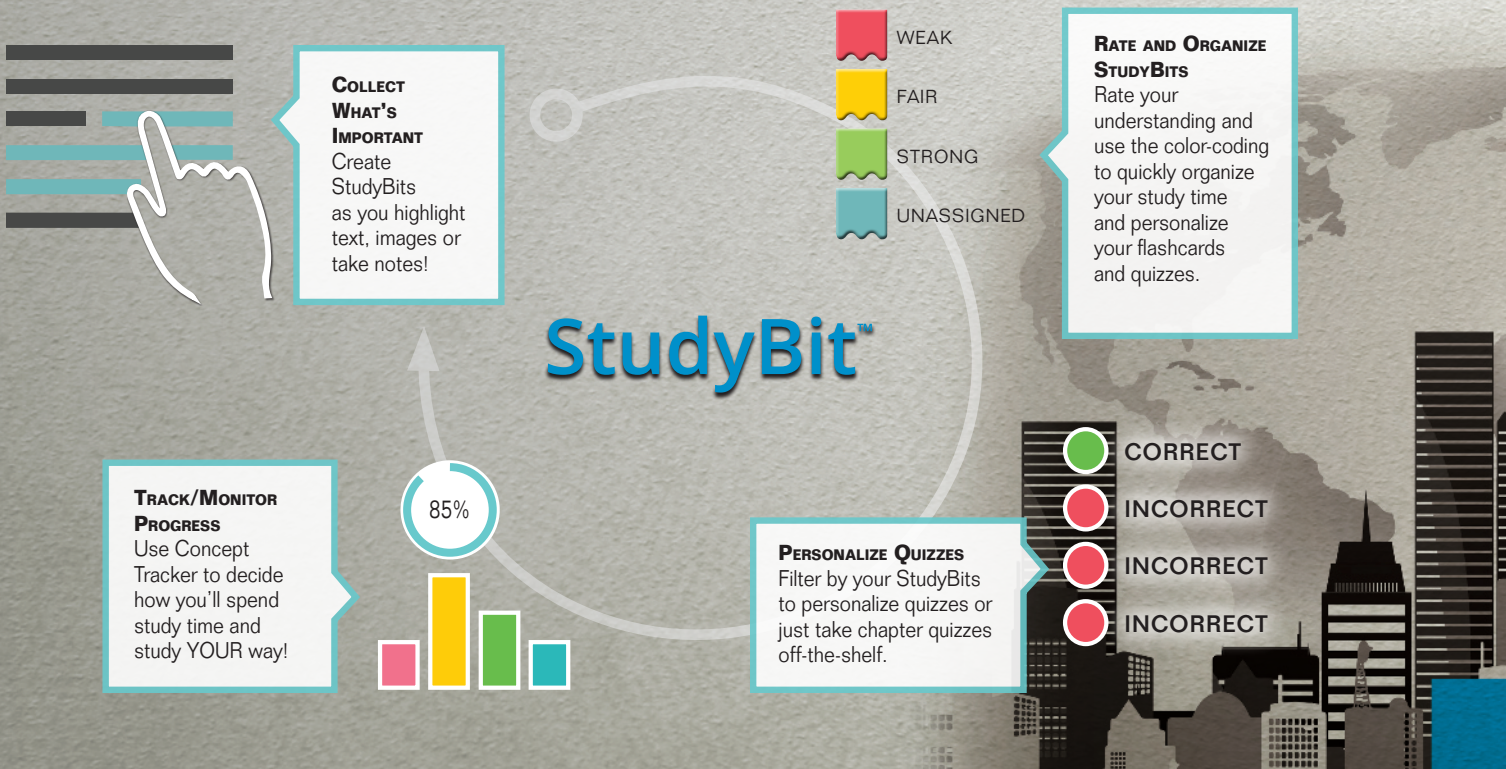
Print + Online



ECON Macro⁵ delivers all the key terms and core concepts for the **Principles of Macro Economics** course.

ECON Online provides the complete narrative from the printed text with additional interactive media and the unique functionality of **StudyBits**—all available on nearly any device!

What is a StudyBit™? Created through a deep investigation of students' challenges and workflows, the StudyBit™ functionality of **ECON Online** enables students of different generations and learning styles to study more effectively by allowing them to learn their way. Here's how they work:



This is an electronic version of the print textbook. Due to electronic rights restrictions, some third party content may be suppressed. Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. The publisher reserves the right to remove content from this title at any time if subsequent rights restrictions require it. For valuable information on pricing, previous editions, changes to current editions, and alternate formats, please visit www.cengage.com/highered to search by ISBN#, author, title, or keyword for materials in your areas of interest.

Important Notice: Media content referenced within the product description or the product text may not be available in the eBook version.

ECON Macroeconomics, 5e
William A. McEachern, University
of Connecticut

Contributing Author: Steve Trost,
Virginia Tech

Vice President, General Manager, 4LTR
Press: Neil Marquardt

Product Director, 4LTR Press:
Steven E. Joos

Product Manager: Laura Redden

Content/Media Developer:
Sarah Dorger

Product Assistant: Lauren Dame
Marketing Manager, Economics:
John Carey

Marketing Manager, 4LTR Press:
Christopher Walz

Marketing Coordinator: Casey Binder

Senior Content Project Manager:
Colleen A. Farmer

Manufacturing Planner: Ron Montgomery

Production Service: MPS Limited

Sr. Art Director: Bethany Casey

Internal Designer: Lou Ann Thesing

Cover Designer: Curio Press, LLC/Lisa
Kuhn

Covers and title page Image:
jannoon028/Shutterstock.com

Computer and table illustration:
iStockPhoto.com/furtaev

Smart Phone illustration: iStockPhoto.
com/dashadima

Last ad: Shutterstock.com/Rawpixel.com

Intellectual Property Analyst:
Diane Garrity

Intellectual Property Project Manager:
Nick Barrows

© 2017, 2015 Cengage Learning®

WCN: 02-200-203

ALL RIGHTS RESERVED. No part of this work covered by the copyright herein may be reproduced or distributed in any form or by any means, except as permitted by U.S. copyright law, without the prior written permission of the copyright owner.

For product information and technology assistance, contact us at
Cengage Learning Customer & Sales Support, 1-800-354-9706

For permission to use material from this text or product,
submit all requests online at **www.cengage.com/permissions**

Further permissions questions can be e-mailed to
permissionrequest@cengage.com

Unless otherwise noted, all items © Cengage Learning.

Library of Congress Control Number: 2015958257

Student Edition ISBN: 978-1-305-65908-7

Student Edition with Online ISBN: 978-1-305-65909-4

Cengage Learning

20 Channel Center Street
Boston, MA 02210
USA

Cengage Learning is a leading provider of customized learning solutions with employees residing in nearly 40 different countries and sales in more than 125 countries around the world. Find your local representative at **www.cengage.com**

Cengage Learning products are represented in Canada by Nelson Education, Ltd.

To learn more about Cengage Learning Solutions, visit **www.cengage.com**

Purchase any of our products at your local college store or at our preferred online store **www.cengagebrain.com**

PART 1 INTRODUCTION TO ECONOMICS

- 1 The Art and Science of Economic Analysis 2
- 2 Economic Tools and Economic Systems 24
- 3 Economic Decision Makers 40
- 4 Demand, Supply, and Markets 56

PART 2 FUNDAMENTALS OF MACROECONOMICS

- 5 Introduction to Macroeconomics 74
- 6 Tracking the U.S. Economy 94
- 7 Unemployment and Inflation 112
- 8 Productivity and Growth 134
- 9 Aggregate Demand 152
- 10 Aggregate Supply 172

PART 3 FISCAL AND MONETARY POLICY

- 11 Fiscal Policy 190
- 12 Federal Budgets and Public Policy 206
- 13 Money and the Financial System 226
- 14 Banking and the Money Supply 248
- 15 Monetary Theory and Policy 266
- 16 Macro Policy Debate: Active or Passive? 284

PART 4 THE INTERNATIONAL SETTING

- 17 International Trade 304
- 18 International Finance 324
- 19 Economic Development 340

Index 360



jannoon028/Shutterstock.com

CONTENTS

Part 1 INTRODUCTION TO ECONOMICS



© Cartoon Network/Everett Collection

1 The Art and Science of Economic Analysis 2

- 1-1 The Economic Problem: Scarce Resources, Unlimited Wants 3
 - 1-1a Resources 4
 - 1-1b Goods and Services 4
 - 1-1c Economic Decision Makers and Markets 5
 - 1-1d A Simple Circular-Flow Model 6
- 1-2 The Art of Economic Analysis 7
 - 1-2a Rational Self-Interest 7
 - 1-2b Choice Requires Time and Information 8
 - 1-2c Economic Analysis Is Marginal Analysis 8
 - 1-2d Microeconomics and Macroeconomics 8
- 1-3 The Science of Economic Analysis 9
 - 1-3a The Role of Theory 10
 - 1-3b The Scientific Method 10
 - 1-3c Normative Versus Positive 11
 - 1-3d Economists Tell Stories 12
 - 1-3e Predicting Average Behavior 12
- 1-4 Some Pitfalls of Faulty Economic Analysis 12
- 1-5 If Economists Are So Smart, Why Aren't They Rich? 13
- 1-6 Final Word 15

2 Economic Tools and Economic Systems 24

- 2-1 Choice and Opportunity Cost 25
 - 2-1a Opportunity Cost 25
 - 2-1b Opportunity Cost Is Subjective 25
 - 2-1c Sunk Cost and Choice 26

- 2-2 Comparative Advantage, Specialization, and Exchange 27
 - 2-2a The Law of Comparative Advantage 27
 - 2-2b Absolute Advantage Versus Comparative Advantage 28
 - 2-2c Specialization and Exchange 28
 - 2-2d Division of Labor and Gains From Specialization 29
- 2-3 The Economy's Production Possibilities 30
 - 2-3a Efficiency and the Production Possibilities Frontier or PPF 30
 - 2-3b Inefficient and Unattainable Production 31
 - 2-3c The Shape of the PPF 31
 - 2-3d What Can Shift the PPF? 32
 - 2-3e What We Learn From the PPF 34
- 2-4 Economic Systems 34
 - 2-4a Three Questions Every Economic System Must Answer 34
 - 2-4b Pure Capitalism 35
 - 2-4c Pure Command System 36
 - 2-4d Mixed and Transitional Economies 36
 - 2-4e Economies Based on Custom or Religion 37
- 2-5 Final Word 37

3 Economic Decision Makers 40

- 3-1 The Household 41
 - 3-1a The Evolution of the Household 41
 - 3-1b Households Maximize Utility 42
 - 3-1c Households As Resource Suppliers 42
 - 3-1d Households As Demanders of Goods and Services 43
- 3-2 The Firm 43
 - 3-2a The Evolution of the Firm 43
 - 3-2b Types of Firms 44
 - 3-2c Cooperatives 45
 - 3-2d Not-for-Profit Organizations 46
 - 3-2e Why Does Household Production Still Exist? 46
- 3-3 The Government 48
 - 3-3a The Role of Government 48
 - 3-3b Government's Structure and Objectives 49
 - 3-3c The Size and Growth of Government 50
 - 3-3d Sources of Government Revenue 50
 - 3-3e Tax Principles and Tax Incidence 51
- 3-4 The Rest of the World 53
 - 3-4a International Trade 53
 - 3-4b Exchange Rates 54
 - 3-4c Trade Restrictions 54
- 3-5 Final Word 54

4 Demand, Supply, and Markets 56

- 4-1 Demand 57
 - 4-1a Law of Demand 57
 - 4-1b Demand Schedule and Demand Curve 59

4-2	What Shifts a Demand Curve?	60
4-2a	Consumer Income	60
4-2b	The Prices of Other Goods	60
4-2c	Consumer Expectations	61
4-2d	Number or Composition of Consumers	61
4-2e	Consumer Tastes	61
4-3	Supply	62
4-3a	Supply Schedule and Supply Curve	62
4-4	What Shifts a Supply Curve?	63
4-4a	State of Technology and Know How	63
4-4b	Resource Prices	64
4-4c	Prices of Other Goods	64
4-4d	Producer Expectations	64
4-4e	Number of Producers in the Market	64
4-5	Demand and Supply Create a Market	65
4-5a	Markets	65
4-5b	Market Equilibrium	65
4-6	Changes in Equilibrium Price and Quantity	67
4-6a	Shifts of the Demand Curve	67
4-6b	Shifts of the Supply Curve	68
4-6c	Simultaneous Shifts of Demand and Supply Curves	69
4-7	Disequilibrium	70
4-7a	Price Floors	70
4-7b	Price Ceilings	71
4-8	Final Word	72

Part 2

FUNDAMENTALS OF MACROECONOMICS



Universal Images Group Limited/Alamy

5 Introduction to Macroeconomics 74

5-1	The National Economy	75
5-1a	What's Special About the National Economy?	76
5-1b	The Human Body and the U.S. Economy	76
5-1c	Knowledge and Performance	77

5-2	Economic Fluctuations and Growth	78
5-2a	U.S. Economic Fluctuations	78
5-2b	The Global Economy	80
5-2c	Leading Economic Indicators	81
5-3	Aggregate Demand and Aggregate Supply	82
5-3a	Aggregate Output and the Price Level	82
5-3b	Aggregate Demand Curve	82
5-3c	Aggregate Supply Curve	83
5-3d	Equilibrium Real GDP	84
5-4	A Brief History of the U.S. Economy	84
5-4a	The Great Depression and Before	85
5-4b	The Age of Keynes: After the Great Depression to the Early 1970s	86
5-4c	Stagflation: 1973–1975 and 1979–1980	87
5-4d	Somewhat Normal Times: 1980 to 2007	87
5-4e	The Great Recession of 2007–2009 and Beyond	88
5-4f	U.S. Economic Growth Since 1929	89
5-5	Final Word	91

6 Tracking the U.S. Economy 94

6-1	The Product of a Nation	95
6-1a	National Income Accounts	95
6-1b	GDP Based on the Expenditure Approach	97
6-1c	Composition of Aggregate Expenditure	98
6-1d	GDP Based on the Income Approach	99
6-2	Circular Flow of Income and Expenditure	100
6-2a	Income Half of the Circular Flow	100
6-2b	Expenditure Half of the Circular Flow	100
6-2c	Leakages Equal Injections	102
6-3	Limitations of National Income Accounting	102
6-3a	Some Production Is Not Counted in GDP	102
6-3b	Leisure, Quality, and Variety	103
6-3c	What's Gross About Gross Domestic Product?	103
6-3d	GDP Does Not Reflect All Costs	104
6-3e	GDP and Economic Welfare	104
6-4	Accounting for Price Changes	105
6-4a	Price Indexes	105
6-4b	Consumer Price Index	106
6-4c	Problems With the CPI	106
6-4d	The GDP Price Index	108
6-4e	Moving From Fixed Weights to Chain Weights	109
6-5	Final Word	109

7 Unemployment and Inflation 112

7-1	Unemployment: Its Measure and Sources	113
7-1a	Measuring Unemployment	114
7-1b	Labor Force Participation Rate	115
7-1c	Unemployment Over Time	116
7-1d	Duration of Unemployment	116
7-1e	Unemployment Among Various Groups	117
7-1f	Unemployment Varies Across Occupations and Regions	118

7-1g International Comparisons of Unemployment	119
7-1h Sources of Unemployment	120
7-2 Other Unemployment Issues	122
7-2a The Meaning of Full Employment	122
7-2b Unemployment Compensation	122
7-2c Problems with Official Unemployment Figures	124
7-3 Inflation: Its Measure and Sources	124
7-3a Two Sources of Inflation	125
7-3b Historical Look at Inflation and the Price Level	126
7-3c Inflation Across Metropolitan Areas	127
7-3d International Comparisons of Inflation	127
7-4 Effects of Inflation	128
7-4a Anticipated Versus Unanticipated Inflation	128
7-4b The Transaction Costs of Variable Inflation	128
7-4c Inflation Obscures Relative Price Changes	129
7-4d Inflation and Interest Rates	129
7-4e Why Is Inflation So Unpopular?	130
7-5 Final Word	131

8 Productivity and Growth 134

8-1 The Theory of Productivity and Growth	135
8-1a Growth and the Production Possibilities Frontier	136
8-1b What is Productivity?	137
8-1c Labor Productivity	138
8-1d Per-Worker Production Function	138
8-1e Technological Change and Know-How	139
8-1f Rules of the Game	140
8-2 Productivity and Growth in Practice	141
8-2a Education and Economic Development	142
8-2b U.S. Labor Productivity	143
8-2c Slowdown and Rebound in Productivity Growth	144
8-2d Output Per Capita	145
8-3 Other Issues of Technology and Growth	145
8-3a Does Technological Change Lead to Unemployment?	146
8-3b Research and Development	147
8-3c Industrial Policy	149
8-4 Final Word	150

9 Aggregate Demand 152

9-1 Consumption	153
9-1a Consumption and Income	153
9-1b The Consumption Function	154
9-1c Marginal Propensities to Consume and to Save	154
9-1d The MPC Is the Slope of the Consumption Function	155

9-2 Nonincome Determinants of Consumption	156
9-2a Net Wealth	156
9-2b The Price Level	157
9-2c The Interest Rate	157
9-2d Consumer Expectations	158
9-2e The Life-Cycle Model of Consumption and Saving	158
9-3 Other Spending Components	159
9-3a Investment	159
9-3b Government Purchases	161
9-3c Net Exports	162
9-4 Aggregate Expenditure and Income	162
9-4a Components of Aggregate Expenditure	162
9-4b Real GDP Demanded	162
9-4c What If Spending Exceeds Real GDP?	163
9-4d What If Real GDP Exceeds Spending?	164
9-5 The Simple Spending Multiplier	164
9-5a An Increase in Spending	164
9-5b Using the Simple Spending Multiplier	165
9-6 The Aggregate Demand Curve	166
9-6a A Higher Price Level	166
9-6b A Lower Price Level	168
9-6c The Multiplier and Shifts in Aggregate Demand	168
9-7 Final Word	170

10 Aggregate Supply 172

10-1 Aggregate Supply in the Short Run	173
10-1a Labor and Aggregate Supply	173
10-1b Potential Output and the Natural Rate of Unemployment	174
10-1c What If the Actual Price Level Is Higher Than Expected?	175
10-1d Why Costs Rise When Output Exceeds Potential	175
10-1e What If the Actual Price Level Is Lower Than Expected?	176
10-1f The Short-Run Aggregate Supply Curve	177
10-2 From the Short Run to the Long Run	178
10-2a Closing an Expansionary Gap	178
10-2b Closing a Recessionary Gap	180
10-3 Aggregate Supply in the Long Run	181
10-3a Tracing Potential Output	181
10-3b Wage Flexibility and Employment	182
10-4 Changes in Aggregate Supply	184
10-4a What if Aggregate Supply Increases?	184
10-4b What if Aggregate Supply Decreases?	185
10-4c Hysteresis and the Natural Rate of Unemployment	186
10-5 Final Word	187

Part 3

FISCAL AND MONETARY POLICY



Olivier Douliery/Pool/Corbis

11 Fiscal Policy 190

- 11-1 Theory of Fiscal Policy 191
 - 11-1a Fiscal Policy Tools 191
 - 11-1b Discretionary Fiscal Policy to Close a Recessionary Gap 192
 - 11-1c Discretionary Fiscal Policy to Close an Expansionary Gap 193
 - 11-1d The Multiplier and the Time Horizon 194
- 11-2 Fiscal Policy Up to the Stagflation of the 1970s 194
 - 11-2a Before the Great Depression 194
 - 11-2b The Great Depression and World War II 195
 - 11-2c Automatic Stabilizers 196
 - 11-2d From the Golden Age to Stagflation 196
- 11-3 Limits on Fiscal Policy's Effectiveness 197
 - 11-3a Estimating the Natural Rate of Unemployment 197
 - 11-3b Lags in Fiscal Policy 198
 - 11-3c Discretionary Fiscal Policy and Permanent Income 198
- 11-4 Fiscal Policy From 1980 to 2007 199
 - 11-4a Fiscal Policy During the 1980s 199
 - 11-4b 1990 to 2007: From Deficits to Surpluses Back to Deficits 199
- 11-5 Fiscal Policy During and After the Great Recession 200
 - 11-5a The Financial Crisis 200
 - 11-5b President Obama's Stimulus Package 201
 - 11-5c Fiscal Policy Since 2007 201
- 11-6 Final Word 203

12 Federal Budgets and Public Policy 206

- 12-1 The Federal Budget Process 207
 - 12-1a Presidential and Congressional Roles 208
 - 12-1b Problems With the Federal Budget Process 209
 - 12-1c Possible Budget Reforms 210
- 12-2 Fiscal Impact of the Federal Budget 210
 - 12-2a The Rationale for Deficits 210
 - 12-2b Budget Philosophies

and Deficits 211

- 12-2c Federal Deficits Since the Birth of the Nation 211
- 12-2d Why Deficits Persist 212
- 12-2e Deficits, Surpluses, Crowding Out, and Crowding In 213
- 12-2f The Twin Deficits 213
- 12-2g A Short-Lived Budget Surplus Then More Deficits 214
- 12-2h The Relative Size of the Public Sector 216

- 12-3 The National Debt in Perspective 217
 - 12-3a Measuring the National Debt 217
 - 12-3b International Perspective on Public Debt 218
 - 12-3c Interest Payments on the National Debt 219
- 12-4 Federal Debt and the Economy 219
 - 12-4a Are Persistent Deficits Sustainable? 220
 - 12-4b The Debt Ceiling and Debt Default 220
 - 12-4c Who Bears the Burden of the Debt? 221
 - 12-4d Crowding Out and Capital Formation 221
 - 12-4e The National Debt and Economic Growth 222
- 12-5 Final Word 222

13 Money and the Financial System 226

- 13-1 The Birth of Money 227
 - 13-1a Barter and the Double Coincidence of Wants 227
 - 13-1b The Earliest Money and its Functions 228
 - 13-1c Properties of the Ideal Money 229
 - 13-1d Coins 231
- 13-2 Money and Banking 231
 - 13-2a Early Banking 231
 - 13-2b Bank Notes and Fiat Money 232
 - 13-2c The Value of Money 232
 - 13-2d When Money Performs Poorly 234
- 13-3 Financial Institutions in the United States 234
 - 13-3a Commercial Banks and Thrifts 234
 - 13-3b Birth of the Fed 234
 - 13-3c Powers of the Federal Reserve System 235
 - 13-3d Banking Troubles During the Great Depression 236
 - 13-3e Banks Lost Deposits When Inflation Increased 238
 - 13-3f Banking Deregulation 238
 - 13-3g Banks on the Ropes 239
 - 13-3h Banks Recover 239
- 13-4 Banking During and After the Great Recession of 2007–2009 241
 - 13-4a Subprime Mortgages and Mortgage-Backed Securities 241
 - 13-4b Bad Incentives Fueled the Financial Crisis of 2008 241
 - 13-4c The Troubled Asset Relief Program 242
 - 13-4d The Dodd-Frank Act of 2010 243
 - 13-4e Top Banks in America and the World 244
- 13-5 Final Word 245

14 Banking and the Money Supply 248

- 14-1 Money Aggregates 249
 - 14-1a Narrow Definition of Money: M1 249
 - 14-1b Broader Definition of Money: M2 250
 - 14-1c Credit Cards and Debit Cards: What's the Difference? 251
 - 14-1d Is Bitcoin Money? 252
- 14-2 How Banks Work 252
 - 14-2a Banks Are Financial Intermediaries 253
 - 14-2b Starting a Bank 253
 - 14-2c Reserve Accounts 255
 - 14-2d Liquidity Versus Profitability 255

- 14-3 How Banks Create Money 256
 - 14-3a Creating Money through Excess Reserves 256
 - 14-3b A Summary of the Rounds 257
 - 14-3c Requirements and Money Expansion 258
 - 14-3d Limitations on Money Expansion 259
 - 14-3e Contraction of the Money Supply 259
- 14-4 The Fed's Tools of Monetary Control 260
 - 14-4a Open-Market Operations and the Federal Funds Rate 260
 - 14-4b The Discount Rate 260
 - 14-4c Reserve Requirements 261
 - 14-4d Responding to Financial Crises 261
 - 14-4e The Fed Is a Money Machine 262
- 14-5 Final Word 263

15 Monetary Theory and Policy 266

- 15-1 The Demand and Supply of Money 267
 - 15-1a The Demand for Money 267
 - 15-1b Money Demand and Interest Rates 268
 - 15-1c The Supply of Money and the Equilibrium Interest Rate 269
- 15-2 Money and Aggregate Demand in the Short Run 270
 - 15-2a Interest Rates and Investment 270
 - 15-2b Adding the Short-Run Aggregate Supply Curve 271
 - 15-2c Recent History of the Federal Funds Rate 272
- 15-3 Money and Aggregate Demand in the Long Run 273
 - 15-3a The Equation of Exchange 273
 - 15-3b The Quantity Theory of Money 274
 - 15-3c What Determines the Velocity of Money? 275
 - 15-3d How Stable Is Velocity? 276
- 15-4 Targets for Monetary Policy 277
 - 15-4a Contrasting Policies 277
 - 15-4b Targets before 1982 278
 - 15-4c Targets after 1982 278
 - 15-4d Other Fed Responses to the Financial Crisis 278
 - 15-4e What about Inflation? 280
 - 15-4f International Considerations 281
- 15-5 Final Word 281

16 Macro Policy Debate: Active or Passive? 284

- 16-1 Active Policy Versus Passive Policy 285
 - 16-1a Closing a Recessionary Gap 285
 - 16-1b Closing an Expansionary Gap 287
 - 16-1c Problems with Active Policy 288
 - 16-1d The Problem of Lags 289
 - 16-1e A Review of Policy Perspectives 290
 - 16-1f Active Policies, Passive Policies, and Presidential Politics 290
- 16-2 The Role of Expectations 292
 - 16-2a Discretionary Policy and Inflation Expectations 292
 - 16-2b Anticipating Policy 293
 - 16-2c Policy Credibility 294
- 16-3 Policy Rules Versus Discretion 295
 - 16-3a Limitations on Discretion 295
 - 16-3b Rules and Rational Expectations 296

- 16-4 The Phillips Curve 297
 - 16-4a The Phillips Framework 298
 - 16-4b The Short-Run Phillips Curve 298
 - 16-4c The Long-Run Phillips Curve 300
 - 16-4d The Natural Rate Hypothesis 300
 - 16-4e Evidence of the Phillips Curve 300
- 16-5 Final Word 301

Part 4 THE INTERNATIONAL SETTING



iStockphoto.com/Rafael Ramirez

17 International Trade 304

- 17-1 The Gains From Trade 305
 - 17-1a A Profile of Exports and Imports 305
 - 17-1b Production Possibilities without Trade 306
 - 17-1c Consumption Possibilities Based on Comparative Advantage 308
 - 17-1d Reasons for International Specialization 309
- 17-2 Trade Restrictions and Welfare Loss 311
 - 17-2a Consumer Surplus and Producer Surplus From Market Exchange 312
 - 17-2b Tariffs 312
 - 17-2c Import Quotas 314
 - 17-2d Quotas in Practice 315
 - 17-2e Tariffs and Quotas Compared 315
 - 17-2f Other Trade Restrictions 316
- 17-3 Efforts to Reduce Trade Barriers 316
 - 17-3a Freer Trade by Multilateral Agreement 316
 - 17-3b World Trade Organization 317
 - 17-3c Common Markets 317
- 17-4 Arguments for Trade Restrictions 318
 - 17-4a National Defense Argument 318
 - 17-4b Infant Industry Argument 319
 - 17-4c Antidumping Argument 319
 - 17-4d Jobs and Income Argument 319
 - 17-4e Declining Industries Argument 320
 - 17-4f Problems with Trade Protection 321
- 17-5 Final Word 321

18 International Finance 324

- 18-1 Balance of Payments 325
 - 18-1a International Economic Transactions 325
 - 18-1b The Merchandise Trade Balance 326
 - 18-1c Balance on Goods and Services 326

18-1d	Net Investment Income and the Current Account Balance	327	18-1e	Unilateral Transfers	327
			18-1f	The Financial Account	328
			18-1g	Trade Deficits and Surpluses	329
18-2	Foreign Exchange Rates and Markets	330			
18-2a	Foreign Exchange	330	18-2b	The Demand for Foreign Exchange	331
			18-2c	The Supply of Foreign Exchange	332
			18-2d	The Foreign Exchange Rate	332
18-3	Other Factors Influencing Foreign Exchange Markets	333			
18-3a	Arbitrageurs and Speculators	333	18-3b	Purchasing Power Parity	334
			18-3c	Flexible Exchange Rates	335
			18-3d	Fixed Exchange Rates	335
18-4	International Monetary System	335			
18-4a	The Bretton Woods Agreement	336	18-4b	Demise of the Bretton Woods System	336
			18-4c	The Current System: Managed Float	337
18-5	Final Word	337			

19 Economic Development 340

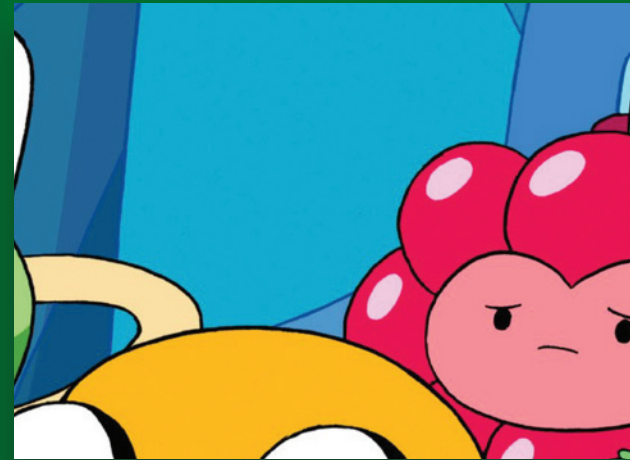
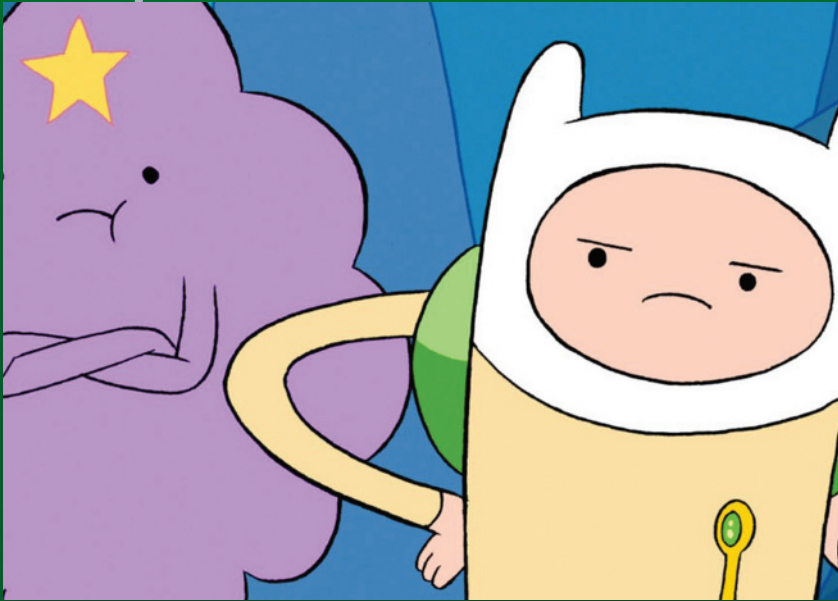
19-1	Worlds Apart	341			
19-1a	Developing and Industrial Economies	341	19-1b	Health and Nutrition	342
			19-1c	High Birth Rates	344
			19-1d	Women in Developing Countries	346

19-2	Productivity: Key to Development	346			
19-2a	Low Labor Productivity	346	19-2b	Technology and Education	346
			19-2c	Inefficient Use of Labor	347
			19-2d	Natural Resources	347
			19-2e	Financial Institutions	348
			19-2f	Capital Infrastructure	348
			19-2g	Entrepreneurship	349
			19-2h	Rules of the Game	350
			19-2i	Income Distribution Within Countries	352
19-3	International Trade and Development	352			
19-3a	Trade Problems for Developing Countries	352			
19-3b	Migration and the Brain Drain	353	19-3c	Import Substitution Versus Export Promotion	353
			19-3d	Trade Liberalization and Special Interests	354
19-4	Foreign Aid and Economic Development	354			
19-4a	Foreign Aid	355	19-4b	Does Foreign Aid Promote Economic Development?	355
			19-4c	Do Economies Converge?	356
19-5	Final Word	358			

Index 360

1

The Art and Science of Economic Analysis



© Cartoon Network/Everett Collection

LEARNING OUTCOMES

After studying this chapter, you will be able to...

- 1-1 Explain the economic problem of scarce resources and unlimited wants
- 1-2 Describe the forces that shape economic choices
- 1-3 Explain the relationship between economic theory and economic reality
- 1-4 Identify some pitfalls of economic analysis
- 1-5 Describe several reasons to study economics

After finishing this chapter go to **PAGE 15** for **STUDY TOOLS**

Topics discussed in Chapter 1 include

- The economic problem
- The scientific method
- Marginal analysis
- Normative versus positive analysis
- Rational self-interest
- Some pitfalls of economic thinking

- ▶ Why are comic-strip and TV characters like those in *Adventure Time*, *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 pay the most? 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, smartphone 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 explain 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.

“Why are comic-strip and TV characters like those in *Adventure Time*, *The Simpsons*, and *Family Guy* missing a finger on each hand?”

1-1

THE ECONOMIC PROBLEM: SCARCE RESOURCES, UNLIMITED WANTS

Would you like a new car, a nicer home, a smarter phone, tastier 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 7.4 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

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.

resources The inputs, or factors of production, used to produce the goods and services that people want; 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

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

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, organize production, and assume the risk of profit or loss. 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. 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



Scarcity means you must choose among options.

© laola/Shutterstock.com; © Colia/Shutterstock.com; © Utekhina Anna/Shutterstock.com; © james weston/Shutterstock.com; © Elena Elisseeva/Shutterstock.com; © zimnytw/Shutterstock.com

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, smarter phones, and so on. Making choices in a world of **scarcity** means we must pass up some goods and services. But not 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 e-mail, fewer telemarketing calls, 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 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 and Markets

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

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

includes foreign households, foreign firms, and foreign governments that supply resources and products to U.S. demanders and demand resources and products from U.S. suppliers.

Markets are the means by which buyers and sellers carry out exchange at mutually agreeable terms. 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, yard sales, flea markets, and swap meets. 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.

1-1d A Simple Circular-Flow Model

Now that you have learned a bit about economic decision makers and markets, consider how all these 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

Exhibit 1

The Simple Circular-Flow Model for Households and Firms

Households earn income by supplying resources to resource markets, as shown in the lower portion of the model. Firms demand these resources to produce goods and services, which they supply to product markets, as shown in the upper portion of the model. Households spend their income to demand these goods and services. This spending flows through product markets as revenue to firms.



primary interaction in a market economy—that between households and firms. Exhibit 1 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 expenditures on 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.

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 choices is the first step toward understanding 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, a physician who owns a pharmacy prescribes 8 percent more drugs on average than a physician who does not own a pharmacy.¹ A physician who owns a nuclear scanner (used to look inside the human body) is seven times more likely to recommend a scan than a physician who does not own a nuclear scanner.² And as one more example of self-interest, the *USA Today* weekly football poll asks coaches to list the top

1. Brian Chen, Paul Gertler, and Chuh-Yuh Yang, “Moral Hazard and Economies of Scope in Physician Ownership of Complementary Medical Services,” NBER Working Paper 19622 (November 2013).

2. Sandeep Jouhar, *Doctored: The Disillusionment of an American Physician*, (Farrar, Straus, and Giroux, 2014), p. 96.

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.³

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 leaves 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).⁴ Managers donate more company funds to charitable causes when they own less of the company (and, thus, when their personal cost of contributing is lower).⁵ TV stations are more likely to donate airtime for public-service announcements during the dead of night than during prime time (which is why, 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.”

3. Matthew Kotchen and Matthew Potoski, “Conflicts of Interest Distort Public Evaluations: Evidence from the Top 25 Ballots of NCAA Football Coaches,” *Journal of Economic Behavior & Organization*, 107 (November 2014): 51–63.

4. Dean Karlan and Margaret McConnell, “Hey Look at Me: The Effect of Giving Circles on Giving,” *Journal of Economic Behavior & Organization* (forthcoming).

5. Ing-Haw Cheng, Harrison Hong, and Kelly Shue, “Do Managers Do Good with Other People’s Money?” NBER Working Paper No. 19432 (September 2013).

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

1-2b 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 a new 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*

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



© Mikovasa/Shutterstock.com

When deciding whether to order dessert, ask yourself, “is the marginal benefit higher than the marginal cost?”

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 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 that shape and color that float.

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

“A good theory helps us understand a messy and confusing world.”

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.

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 cause and effect in 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 the human form (some even lack arms and heads). Comic strips and cartoons simplify a character's anatomy—leaving out fingers (in the case of *Adventure Time*, *The Simpsons*, and *Family Guy*) or a mouth (in the case of *Dilbert*), for instance. You might think of economic theory as a stripped-down, or streamlined, version of economic reality.

A good theory helps us understand a messy and confusing world. Lacking a theory of how things work, our thinking can become cluttered with facts, one piled on another, as in a messy closet. You could think of a good theory as a closet organizer for the mind. A good theory offers a helpful guide to sorting, saving, and understanding information.

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