

FOUNDATIONS OF

MACROECONOMICS

8TH EDITION

Bade ■ Parkin



 Pearson





FOUNDATIONS OF MACROECONOMICS

delivers a complete, hands-on learning system designed around active learning.

A Learning-by-Doing Approach

The **Checklist** that begins each chapter highlights the key topics covered and the chapter is divided into sections that directly correlate to the Checklist.

The **Checkpoint** that ends each section provides a full page of practice problems to encourage students to review the material while it is fresh in their minds.

Each chapter opens with a question about a central issue that sets the stage for the material.



Why did the price of coffee rise in 2014?

4

Demand and Supply

When you have completed your study of this chapter, you will be able to

- 1 Distinguish between quantity demanded and demand, and explain what determines demand.
- 2 Distinguish between quantity supplied and supply, and explain what determines supply.
- 3 Explain how demand and supply determine price and quantity in a market, and explain the effects of changes in demand and supply.

CHAPTER CHECKLIST

MyEconLab Big Picture Video

CHECKPOINT 4.1

Distinguish between quantity demanded and demand, and explain what determines demand.

Practice Problems

The following events occur one at a time in the market for smartphones:

- The price of a smartphone falls.
 - Producers announce that the price of a smartphone will fall next month.
 - The price of a call made from a smartphone falls.
 - The price of a call made from a land-line phone increases.
 - An increase in memory makes smartphones more popular.
1. Explain the effect of each event on the demand for smartphones.
 2. Use a graph to illustrate the effect of each event.
 3. Does any event (or events) illustrate the law of demand?

In the News

Airline profits soar yet no relief for passengers

MyEconLab Study Plan 4.1
Key Terms Quiz
Solutions Video



EYE on the PRICE OF COFFEE

MyEconLab Critical Thinking Exercise

Why Did the Price of Coffee Rise in 2014?

When a fungus called coffee rust swept through Brazil and other countries of South America in 2014, world coffee production decreased and the price of coffee beans increased.

The table below provides some data on the quantity and price of coffee in 2013 and 2014. What does the data tell us?

It tells us that the quantity of coffee

You can answer this question from the information provided. You know that an increase in demand brings a rise in the price and an increase in the quantity bought, while a decrease in supply brings a rise in the price and a decrease in the quantity bought.

Because the quantity of coffee decreased and the price increased, there must have been a decrease in the sup-

The figure illustrates the global market for coffee in 2013 and 2014. The demand curve D shows the demand for coffee, which we will assume was the same in both years.

In 2013, the supply curve was S_{2013} , the equilibrium price was \$1.04 per pound and the equilibrium quantity traded was 19.4 billion pounds.

In 2014, decreased coffee produc-

FIGURE 4.4

Change in Quantity Demanded Versus Change in Demand

MyEconLab Animation

1 A decrease in the quantity demanded

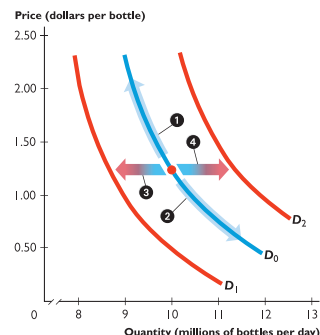
The quantity demanded decreases and there is a movement up along the demand curve D_0 if the price of the good rises and other things remain the same.

3 A decrease in demand

Demand decreases and the demand curve shifts leftward (from D_0 to D_1) if

- The price of a substitute falls or the price of a complement rises.
- The price of the good is expected to fall.
- Income decreases.*
- Expected future income or credit decreases.
- The number of buyers decreases.

*Bottled water is a normal good.



2 An increase in the quantity demanded

The quantity demanded increases and there is a movement down along the demand curve D_0 if the price of the good falls and other things remain the same.

4 An increase in demand

Demand increases and the demand curve shifts rightward (from D_0 to D_2) if

- The price of a substitute rises or the price of a complement falls.
- The price of the good is expected to rise.
- Income increases.
- Expected future income or credit increases.
- The number of buyers increases.

Eye On boxes apply theory to important issues and problems that shape our global society and individual decisions.

Confidence-Building Graphs

use color to show the direction of shifts and detailed, numbered captions guide students step-by-step through the action.

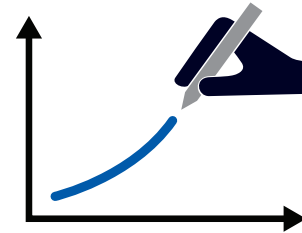
100% of the figures are animated in MyEconLab, with step-by-step audio narration.

Practice, Engage, and Assess



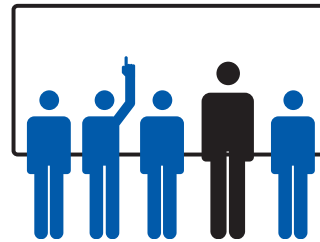
- **Enhanced eText**—The Pearson eText gives students access to their textbook anytime, anywhere. In addition to note-taking, highlighting, and bookmarking, the Pearson eText offers interactive and sharing features. Students actively read and learn through auto-graded practice, real-time data-graphs, figure animations, author videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

- **Practice**—Algorithmically generated homework and study plan exercises with instant feedback ensure varied and productive practice, helping students improve their understanding and prepare for quizzes and tests. Draw-graph exercises encourage students to practice the language of economics.



- **Learning Resources**—Personalized learning aids such as Help Me Solve This problem walkthroughs and Figure Animations provide on-demand help when students need it most.

- **Personalized Study Plan**—Assists students in monitoring their own progress by offering them a customized study plan based on Homework, Quiz, and Test results. Includes regenerated exercises with unlimited practice, as well as the opportunity to earn mastery points by completing quizzes on recommended learning objectives.



- **Dynamic Study Modules**—With a focus on key topics, these modules work by continuously assessing student performance and activity in real time and, using data and analytics, provide personalized content to reinforce concepts that target each student's particular strengths and weaknesses.

- **Digital Interactives**—Digital Interactives are engaging assessment activities that promote critical thinking and application of key economic principles. Each Digital Interactive has progressive levels where students can explore, apply, compare, and analyze economic principles. Many Digital Interactives include real time data from FRED[®] that displays, in graph and table form, up-to-the-minute data on key macro variables. Digital Interactives can be assigned and graded within MyEconLab, or used as a lecture tool to encourage engagement, classroom conversation, and group work.



with MyEconLab[®]

- **NEW: Math Review Exercises in MyEconLab**—MyEconLab now offers an array of assignable and auto-graded exercises that cover fundamental math concepts. Geared specifically toward principles and intermediate economics students, these exercises aim to increase student confidence and success in these courses. Our new Math Review is accessible from the assignment manager and contains over 150 graphing, algebra, and calculus exercises for homework, quiz, and test use.

$$P = c + dQ_s$$



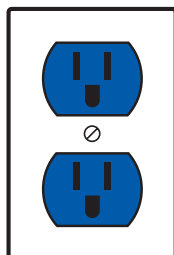
- **Real-Time Data Analysis Exercises**—Using current macro data to help students understand the impact of changes in economic variables, Real-Time Data Analysis Exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED[®] site and update as new data are available.

- **Current News Exercises**—Every week, current microeconomic and macroeconomic news articles or videos, with accompanying exercises, are posted to MyEconLab. Assignable and auto-graded, these multi-part exercises ask students to recognize and apply economic concepts to real-world events.



- **Experiments**—Flexible, easy-to-assign, auto-graded, and available in Single Player and Multiplayer versions, Experiments in MyEconLab make learning fun and engaging.

- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.



- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.

- **Mobile Ready**—Students and instructors can access multimedia resources and complete assessments right at their fingertips, on any mobile device.



This page intentionally left blank

Foundations of
MACROECONOMICS

Robin Bade

Michael Parkin

University of Western Ontario



EIGHTH EDITION



330 Hudson Street, NY NY 10013

Vice President, Business Publishing: Donna Battista
Director of Portfolio Management: Adrienne D'Ambrosio
Portfolio Manager: Ashley Bryan
Editorial Assistant: Michelle Zeng
Vice President, Product Marketing: Roxanne McCarley
Director of Strategic Marketing: Brad Parkins
Strategic Marketing Manager: Deborah Strickland
Product Marketer: Tricia Murphy
Field Marketing Manager: Ramona Elmer
Field Marketing Assistant: Kristen Compton
Product Marketing Assistant: Jessica Quazza
Vice President, Production and Digital Studio, Arts and Business: Etain O'Dea
Director of Production, Business: Jeff Holcomb
Managing Producer, Business: Alison Kalil
Content Producer: Nancy Freihofner

Operations Specialist: Carol Melville
Creative Director: Blair Brown
Manager, Learning Tools: Brian Surette
Managing Producer, Digital Studio, Arts and Business: Diane Lombardo
Digital Studio Producer: Melissa Honig
Digital Studio Producer: Alana Coles
Digital Content Team Lead: Noel Lotz
Digital Content Project Lead: Noel Lotz
Full-Service Project Management and Composition: Integra Software Services
Interior Design: Integra Software Services
Cover Design: Jon Boylan
Cover Art: Panu Ruangjan/www.shutterstock.com
Technical Illustrator: Richard Parkin
Printer/Binder: R.R. Donnelley
Cover Printer: Phoenix Color

Copyright © 2018, 2015, 2013 by Pearson Education, Inc. or its affiliates. All Rights Reserved. Manufactured in the United States of America. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permissions, request forms, and the appropriate contacts within the Pearson Education Global Rights and Permissions department, please visit www.pearsoned.com/permissions/.

Acknowledgments of third-party content appear on the appropriate page within the text and on pages C-1–C-2, which constitutes an extension of this copyright page.

PEARSON, ALWAYS LEARNING, and MYECONLAB® are exclusive trademarks owned by Pearson Education, Inc. or its affiliates in the U.S. and/or other countries.

Unless otherwise indicated herein, any third-party trademarks, logos, or icons that may appear in this work are the property of their respective owners, and any references to third-party trademarks, logos, icons, or other trade dress are for demonstrative or descriptive purposes only. Such references are not intended to imply any sponsorship, endorsement, authorization, or promotion of Pearson's products by the owners of such marks, or any relationship between the owner and Pearson Education, Inc., or its affiliates, authors, licensees, or distributors.

Library of Congress Cataloging-in-Publication Data

Names: Bade, Robin, author. | Parkin, Michael, 1939– author.

Title: Foundations of economics / Robin Bade, Michael Parkin, University of Western Ontario.

Description: 8th edition. | Boston : Pearson, [2016] | Revised edition of the authors' Foundations of economics, [2015] | Includes bibliographical references and index.

Identifiers: LCCN 201604351 | ISBN 9780134486819 | ISBN 9780134491981 (foundations of microeconomics) | ISBN 9780134492001 (foundations of macroeconomics) | ISBN 9780134491974 (essential foundations of economics)

Subjects: LCSH: Economics.

Classification: LCC HB171.5 .B155 2016 | DDC 330—dc23

LC record available at <https://lccn.loc.gov/201604351>



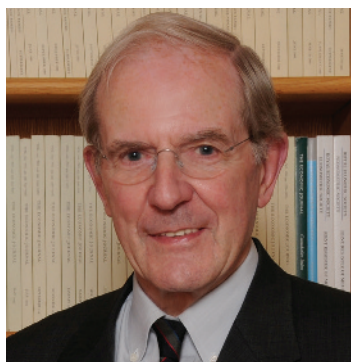
To Erin, Tessa, Jack, Abby, and Sophie

About the Authors



Robin Bade was an undergraduate at the University of Queensland, Australia, where she earned degrees in mathematics and economics. After a spell teaching high school math and physics, she enrolled in the Ph.D. program at the Australian National University, from which she graduated in 1970. She has held faculty appointments at the University of Edinburgh in Scotland, at Bond University in Australia, and at the Universities of Manitoba, Toronto, and Western Ontario in Canada. Her research on international capital flows appears in the *International Economic Review* and the *Economic Record*.

Robin first taught the principles of economics course in 1970 and has taught it (alongside intermediate macroeconomics and international trade and finance) most years since then. She developed many of the ideas found in this text while conducting tutorials with her students at the University of Western Ontario.



Michael Parkin studied economics in England and began his university teaching career immediately after graduating with a B.A. from the University of Leicester. He learned the subject on the job at the University of Essex, England's most exciting new university of the 1960s, and at the age of 30 became one of the youngest full professors. He is a past president of the Canadian Economics Association and has served on the editorial boards of the *American Economic Review* and the *Journal of Monetary Economics*. His research on macroeconomics, monetary economics, and international economics has resulted in more than 160 publications in journals and edited volumes, including the *American Economic Review*, the *Journal of Political Economy*, the *Review of Economic Studies*, the *Journal of Monetary Economics*, and the *Journal of Money, Credit, and Banking*. He is author of the best-selling textbook, *Economics* (Pearson), now in its Twelfth Edition.

Robin and Michael are a wife-and-husband team. Their most notable joint research created the Bade-Parkin Index of central bank independence and spawned a vast amount of research on that topic. They don't claim credit for the independence of the new European Central Bank, but its constitution and the movement toward greater independence of central banks around the world were aided by their pioneering work. Their joint textbooks include *Macroeconomics* (Prentice-Hall), *Modern Macroeconomics* (Pearson Education Canada), and *Economics: Canada in the Global Environment*, the Canadian adaptation of Parkin, *Economics* (Addison-Wesley). They are dedicated to the challenge of explaining economics ever more clearly to a growing body of students.

Music, the theater, art, walking on the beach, and five grandchildren provides their relaxation and fun.

MACROECONOMICS

Brief Contents

PART 1	INTRODUCTION
	1 Getting Started 1
	2 The U.S. and Global Economies 33
	3 The Economic Problem 59
	4 Demand and Supply 83
PART 2	MONITORING THE MACROECONOMY
	5 GDP: A Measure of Total Production and Income 115
	6 Jobs and Unemployment 145
	7 The CPI and the Cost of Living 167
PART 3	THE REAL ECONOMY
	8 Potential GDP and the Natural Unemployment Rate 191
	9 Economic Growth 215
	10 Finance, Saving, and Investment 243
PART 4	THE MONEY ECONOMY
	11 The Monetary System 269
	12 Money, Interest, and Inflation 299
PART 5	ECONOMIC FLUCTUATIONS
	13 Aggregate Supply and Aggregate Demand 327
	14 Aggregate Expenditure Multiplier 353
	15 The Short-Run Policy Tradeoff 379
PART 6	MACROECONOMIC POLICY
	16 Fiscal Policy 401
	17 Monetary Policy 427
	18 International Trade Policy 455
	19 International Finance 479
	Glossary G-1
	Index I-1
	Credits C-1

This page intentionally left blank

Contents

PART 1 INTRODUCTION

CHAPTER 1 Getting Started 1

CHAPTER CHECKLIST 1

- 1.1 Definition and Questions** 2
Scarcity 2
Economics Defined 2
What, How, and For Whom? 3
Can the Pursuit of Self-Interest Be in the Social Interest? 4
CHECKPOINT 1.1 7

- 1.2 The Economic Way of Thinking** 8
A Choice Is a Tradeoff 8
Cost: What You *Must* Give Up 8
Benefit: What You Gain 9
Rational Choice 9
How Much? Choosing at the Margin 10
Choices Respond to Incentives 11
CHECKPOINT 1.2 13

- 1.3 Economics as a Life Skill** 14
Economics as a Decision Tool 14
Economics as a Social Science 14
Economics as an Aid to Critical Thinking 16
CHECKPOINT 1.3 18

CHAPTER SUMMARY 19

CHAPTER CHECKPOINT 20

Appendix: Making and Using Graphs 23

- Basic Idea 23
Interpreting Data Graphs 24
Interpreting Graphs Used in Economic Models 26
The Slope of a Relationship 29
Relationships Among More Than Two Variables 30
APPENDIX CHECKPOINT 32

EYE on the BENEFIT AND COST OF SCHOOL

- Did You Make the Right Decision? 12

EYE on YOUR LIFE

- Your Time Allocation 17

EYE on the PAST

- Adam Smith and the Birth of Economics as a Social Science 18

CHAPTER 2 The U.S. and Global Economies 33

CHAPTER CHECKLIST 33

- 2.1 What, How, and for Whom?** 34
What Do We Produce? 34
How Do We Produce? 36
For Whom Do We Produce? 39
CHECKPOINT 2.1 40
- 2.2 The Global Economy** 41
The People 41
The Economies 41
What in the Global Economy 42
How in the Global Economy 44
For Whom in the Global Economy 44
CHECKPOINT 2.2 47
- 2.3 The Circular Flows** 48
Households and Firms 48
Markets 48
Real Flows and Money Flows 48
Governments 50
Governments in the Circular Flow 51
Circular Flows in the Global Economy 52
CHECKPOINT 2.3 54

CHAPTER SUMMARY 55

CHAPTER CHECKPOINT 56

EYE on the U.S. ECONOMY

- What We Produce 35

- **EYE on the PAST**
Changes in What We Produce 36
- **EYE on the U.S. ECONOMY**
Changes in How We Produce in the Information Economy 38
- **EYE on the DREAMLINER**
Who Makes the Dreamliner? 43
- **EYE on the GLOBAL ECONOMY**
Differences in How We Produce 45
- **EYE on YOUR LIFE**
The U.S. and Global Economies in Your Life 47
- **EYE on the PAST**
Growing Government 52
- **EYE on the GLOBAL ECONOMY**
The Ups and Downs in International Trade 54

CHAPTER 3 The Economic Problem 59

CHAPTER CHECKLIST 59

- 3.1 **Production Possibilities** 60
Production Possibilities Frontier 60
How the *PPF* Illustrates Scarcity and Its Consequences 61
CHECKPOINT 3.1 65
- 3.2 **Opportunity Cost** 66
The Opportunity Cost of a Smartphone 66
Opportunity Cost and the Slope of the *PPF* 67
Opportunity Cost Is a Ratio 67
Increasing Opportunity Costs Are Everywhere 68
Your Increasing Opportunity Cost 68
CHECKPOINT 3.2 69
- 3.3 **Economic Growth** 70
CHECKPOINT 3.3 72
- 3.4 **Specialization and Trade** 73
Absolute Advantage and Comparative Advantage 73
Comparative Advantage: A Model 74
Achieving Gains from Trade 76
The Economy's Production Possibilities Frontier 77
CHECKPOINT 3.4 78

CHAPTER SUMMARY 79

CHAPTER CHECKPOINT 80

- **EYE on YOUR LIFE**
Your Production Possibilities Frontier 64

- **EYE on the ENVIRONMENT**
Is Wind Power Free? 68
- **EYE on the U.S. ECONOMY**
Expanding Our Production Possibilities 71
- **EYE on the GLOBAL ECONOMY**
Hong Kong's Rapid Economic Growth 72
- **EYE on the U.S. ECONOMY**
No One Knows How to Make a Pencil 73
- **EYE on YOUR LIFE**
Your Comparative Advantage 77

CHAPTER 4 Demand and Supply 83

CHAPTER CHECKLIST 83

Competitive Markets 84

- 4.1 **Demand** 85
The Law of Demand 85
Demand Schedule and Demand Curve 85
Changes in Demand 87
Illustrating Changes in Buying Plans 88
CHECKPOINT 4.1 89
- 4.2 **Supply** 90
The Law of Supply 90
Supply Schedule and Supply Curve 90
Changes in Supply 92
Illustrating a Change in Selling Plans 93
CHECKPOINT 4.2 95
- 4.3 **Market Equilibrium** 96
Price: A Market's Automatic Regulator 96
Predicting Price Changes: Three Questions 97
Effects of Changes in Demand 98
Effects of Changes in Supply 100
Effects of Changes in Both Demand and Supply 102
CHECKPOINT 4.3 104
- 4.4 **Price Rigidities** 105
Price Floor 105
Price Ceiling or Price Cap 107
Sticky Price 109
CHECKPOINT 4.4 110

CHAPTER SUMMARY 111

CHAPTER CHECKPOINT 112

- **EYE on YOUR LIFE**
Understanding and Using Demand and Supply 94
- **EYE on the GLOBAL ECONOMY**
The Markets for Cocoa and Chocolate 99

- **EYE on the PRICE OF COFFEE**
Why Did the Price of Coffee Rise in 2014? 101
- **EYE on the U.S. ECONOMY**
The Federal Minimum Wage 107

PART 2 MONITORING THE MACROECONOMY

CHAPTER 5 **GDP: A Measure of Total Production and Income 115**

CHAPTER CHECKLIST 115

- 5.1 GDP, Income, and Expenditure** 116
 - GDP Defined 116
 - Circular Flows in the U.S. Economy 117
 - Expenditure Equals Income 118
 - CHECKPOINT 5.1** 120
- 5.2 Measuring U.S. GDP** 121
 - The Expenditure Approach 121
 - The Income Approach 123
 - GDP and Related Measures of Production and Income 125
 - Real GDP and Nominal GDP 126
 - Calculating Real GDP 126
 - Using the Real GDP Numbers 127
 - CHECKPOINT 5.2** 128
- 5.3 The Uses and Limitations of Real GDP** 129
 - The Standard of Living Over Time 129
 - Tracking the Course of the Business Cycle 130
 - The Standard of Living Among Countries 132
 - Goods and Services Omitted from GDP 133
 - Other Influences on the Standard of Living 134
 - CHECKPOINT 5.3** 136

CHAPTER SUMMARY 137

CHAPTER CHECKPOINT 138

- Appendix: Measuring Real GDP** 141
 - The Problem With Base Year Prices 141
 - Value Production in the Prices of Adjacent Years 141
 - APPENDIX CHECKPOINT** 144

- **EYE on the U.S. ECONOMY**
Is a Computer Program an Intermediate Good or a Final Good? 122

- **EYE on BOOMS AND BUSTS**
How Do We Track Economic Booms and Busts? 132

- **EYE on YOUR LIFE**
Making GDP Personal 134
- **EYE on the GLOBAL ECONOMY**
Which Country Has the Highest Standard of Living? 135

CHAPTER 6 **Jobs and Unemployment 145**

CHAPTER CHECKLIST 145

- 6.1 Labor Market Indicators** 146
 - Current Population Survey 146
 - Population Survey Criteria 146
 - Three Labor Market Indicators 147
 - Alternative Measures of Unemployment 148
 - CHECKPOINT 6.1** 150
- 6.2 Labor Market Trends and Fluctuations** 151
 - Unemployment Rate 151
 - The Participation Rate 152
 - Alternative Measures of Unemployment 154
 - CHECKPOINT 6.2** 155
- 6.3 Unemployment and Full Employment** 156
 - Frictional Unemployment 156
 - Structural Unemployment 156
 - Cyclical Unemployment 157
 - “Natural” Unemployment 157
 - Unemployment and Real GDP 159
 - CHECKPOINT 6.3** 162

CHAPTER SUMMARY 163

CHAPTER CHECKPOINT 164

- **EYE on the U.S. ECONOMY**
The Current Population Survey 149
- **EYE on the GLOBAL ECONOMY**
Unemployment and Labor Force Participation 153
- **EYE on the U.S. ECONOMY**
How Long Does it Take to Find a Job? 157

■ **EYE on FULL EMPLOYMENT**

Are We Back at Full Employment? 158

■ **EYE on YOUR LIFE**

Your Labor Market Status and Activity 161



CHAPTER 7

The CPI and the Cost of Living 167

CHAPTER CHECKLIST 167

7.1 The Consumer Price Index 168

Reading the CPI Numbers 168

Constructing the CPI 168

The CPI Market Basket 168

The Monthly Price Survey 169

Calculating the CPI 170

Measuring Inflation and Deflation 171

The Price Level, Inflation, and Deflation in the United States 171

CHECKPOINT 7.1 173

7.2 The CPI and Other Price Level Measures 174

Sources of Bias in the CPI 174

The Magnitude of the Bias 175

Two Consequences of the CPI Bias 176

Alternative Consumer Price Indexes 176

CHECKPOINT 7.2 179

7.3 Nominal and Real Values 180

Dollars and Cents at Different Dates 180

Nominal and Real Values in Macroeconomics 181

Nominal GDP and Real GDP 181

Nominal Wage Rate and Real Wage Rate 182

Nominal Interest Rate and Real Interest Rate 184

CHECKPOINT 7.3 186

CHAPTER SUMMARY 187

CHAPTER CHECKPOINT 188

■ **EYE on the PAST**

700 Years of Inflation and Deflation 172

■ **EYE on the U.S. ECONOMY**

Measuring and Forecasting Inflation: The Sticky-Price CPI 178

■ **EYE on the U.S. ECONOMY**

Deflating the GDP Balloon 181

■ **EYE on the PAST**

The Nominal and Real Wage Rates of Presidents of the United States 183

■ **EYE on BOX OFFICE HITS**

Which Movie *Really* Was the Biggest Box Office Hit? 184

■ **EYE on YOUR LIFE**

A Student's CPI 185

PART 3 THE REAL ECONOMY



CHAPTER 8

Potential GDP and the Natural Unemployment Rate 191

CHAPTER CHECKLIST 191

Macroeconomic Approaches and Pathways 192

The Three Main Schools of Thought 192

Today's Consensus 193

The Road Ahead 194

8.1 Potential GDP 195

The Production Function 196

The Labor Market 197

CHECKPOINT 8.1 203

8.2 The Natural Unemployment Rate 204

Job Search 205

Job Rationing 206

CHECKPOINT 8.2 210

CHAPTER SUMMARY 211

CHAPTER CHECKPOINT 212

■ **EYE on the U.S. ECONOMY**

The Lucas Wedge and the Okun Gap 194

■ **EYE on the GLOBAL ECONOMY**

Potential GDP in the United States and the European Union 195

■ **EYE on POTENTIAL GDP**

Why Do Americans Earn More and Produce More Than Europeans? 202

■ **EYE on the PAST**

The Natural Unemployment Rate Over Seven Decades 204

■ **EYE on the GLOBAL ECONOMY**

Unemployment Benefits and the Natural Unemployment Rate 206

■ **EYE on the U.S. ECONOMY**

The Federal Minimum Wage 209

■ **EYE on YOUR LIFE**

Natural Unemployment 209

CHAPTER 9 Economic Growth 215

CHAPTER CHECKLIST 215

- 9.1 The Basics of Economic Growth** 216
Calculating Growth Rates 216
The Magic of Sustained Growth 218
CHECKPOINT 9.1 219
- 9.2 Labor Productivity Growth** 220
Labor Productivity 220
Saving and Investment in Physical Capital 220
Expansion of Human Capital and Discovery of New Technologies 222
Combined Influences Bring Labor Productivity Growth 224
CHECKPOINT 9.2 227
- 9.3 Causes and Effects of Economic Growth** 228
Old Growth Theory 228
New Growth Theory 228
Economic Growth and the Distribution of Income 230
CHECKPOINT 9.3 233
- 9.4 Achieving Faster Growth** 234
Preconditions for Economic Growth 234
Policies to Achieve Faster Growth 235
How Much Difference Can Policy Make? 236
CHECKPOINT 9.4 238

CHAPTER SUMMARY 239

CHAPTER CHECKPOINT 240

■ **EYE on the PAST**

How Fast Has Real GDP per Person Grown? 217

■ **EYE on the U.S. ECONOMY**

U.S. Growth Is Slowing 218

■ **EYE on the U.S. ECONOMY**

U.S. Labor Productivity Growth Since 1960 226

■ **EYE on the U.S. ECONOMY**

The Changing Shares in the Gains from Economic Growth 231

■ **EYE on YOUR LIFE**

How You Influence and Are Influenced by Economic Growth 232

■ **EYE on RICH AND POOR NATIONS**

Why Are Some Nations Rich and Others Poor? 237

CHAPTER 10 Finance, Saving, and Investment 243

CHAPTER CHECKLIST 243

- 10.1 Financial Institutions and Financial Markets** 244
Some Finance Definitions 244
Markets for Financial Capital 245
Financial Institutions 247
Insolvency and Illiquidity 248
Interest Rates and Asset Prices 248
CHECKPOINT 10.1 249
- 10.2 The Loanable Funds Market** 250
Flows in the Loanable Funds Market 250
The Demand for Loanable Funds 250
The Supply of Loanable Funds 253
Equilibrium in the Loanable Funds Market 256
Changes in Demand and Supply 257
CHECKPOINT 10.2 259
- 10.3 Government in Loanable Funds Market** 260
A Government Budget Surplus 260
A Government Budget Deficit 261
CHECKPOINT 10.3 264

CHAPTER SUMMARY 265

CHAPTER CHECKPOINT 266

■ **EYE on the U.S. ECONOMY**

Interest Rate Patterns 246

■ **EYE on the U.S. ECONOMY**

The Loanable Funds Market in a Financial Crisis 258

■ **EYE on YOUR LIFE**

Your Participation in the Loanable Funds Market 262

■ **EYE on FINANCIAL MARKETS**

Why Have Interest Rates Been So Low? 263

PART 4 THE MONEY ECONOMY

CHAPTER 11 The Monetary System 269

CHAPTER CHECKLIST 269

- 11.1 What is Money?** 270
 Definition of Money 270
 The Functions of Money 270
 Money Today 272
 Official Measures of Money: M1 and M2 272
 Checks, Credit Cards, Debit Cards, and Mobile Wallets 273
 An Embryonic New Money: E-Cash 274
CHECKPOINT 11.1 275
- 11.2 The Banking System** 276
 Commercial Banks 276
 Thrift Institutions 279
 Money Market Funds 279
CHECKPOINT 11.2 280
- 11.3 The Federal Reserve System** 281
 The Structure of the Federal Reserve 281
 The Fed's Policy Tools 282
 How the Fed's Policy Tools Work 283
CHECKPOINT 11.3 284
- 11.4 Regulating the Quantity of Money** 285
 Creating Deposits by Making Loans 285
 How Open Market Operations Change the Monetary Base 287
 The Multiplier Effect of an Open Market Operation 290
 The Money Multiplier 291
CHECKPOINT 11.4 294

CHAPTER SUMMARY 295

CHAPTER CHECKPOINT 296

- **EYE on the PAST**
The "Invention" of Banking 277
- **EYE on the U.S. ECONOMY**
Commercial Banks Under Stress in the Financial Crisis 279
- **EYE on YOUR LIFE**
Money and Your Role in Its Creation 285
- **EYE on CREATING MONEY**
How Does the Fed Create Money and Regulate Its Quantity? 292

CHAPTER 12 Money, Interest, and Inflation 299

CHAPTER CHECKLIST 299

- Where We are and Where We're Heading** 300
 The Real Economy 300
 The Money Economy 300
 Real and Money Interactions and Policy 300
- 12.1 Money and the Interest Rate** 301
 The Demand for Money 301
 Changes in the Demand for Money 303
 The Supply of Money 304
 The Nominal Interest Rate 304
 Changing the Interest Rate 306
CHECKPOINT 12.1 308
- 12.2 Money, the Price Level, and Inflation** 309
 The Money Market in the Long Run 309
 A Change in the Quantity of Money 311
 The Price Level in a Baby-Sitting Club 312
 The Quantity Theory of Money 312
 Inflation and the Quantity Theory of Money 314
 Hyperinflation 317
CHECKPOINT 12.2 318
- 12.3 The Cost of Inflation** 319
 Tax Costs 319
 Shoe-Leather Costs 320
 Confusion Costs 320
 Uncertainty Costs 321
 How Big Is the Cost of Inflation? 321
CHECKPOINT 12.3 322

CHAPTER SUMMARY 323

CHAPTER CHECKPOINT 324

- **EYE on the U.S. ECONOMY**
Credit Cards and Money 306
- **EYE on YOUR LIFE**
Money Holding and Fed Watching 307
- **EYE on INFLATION**
What Causes Inflation? 316
- **EYE on the PAST**
Hyperinflation in Germany in the 1920s 317

PART 5 ECONOMIC FLUCTUATIONS

CHAPTER 13 Aggregate Supply and Aggregate Demand 327

CHAPTER CHECKLIST 327

- 13.1 Aggregate Supply** 328
 Aggregate Supply Basics 328
 Changes in Aggregate Supply 331
CHECKPOINT 13.1 333
- 13.2 Aggregate Demand** 334
 Aggregate Demand Basics 334
 Changes in Aggregate Demand 336
 The Aggregate Demand Multiplier 338
CHECKPOINT 13.2 339
- 13.3 Explaining Economic Trends and Fluctuations** 340
 Macroeconomic Equilibrium 340
 Three Types of Macroeconomic Equilibrium 341
 Economic Growth and Inflation Trends 342
 The Business Cycle 343
 Inflation Cycles 344
 Deflation and the Great Depression 346
CHECKPOINT 13.3 348

CHAPTER SUMMARY 349

CHAPTER CHECKPOINT 350

- **EYE on the U.S. ECONOMY**
 U.S. Economic Growth, Inflation, and the Business Cycle 342
- **EYE on YOUR LIFE**
 Using the AS-AD Model 346
- **EYE on the BUSINESS CYCLE**
 Why Did the U.S. Economy Go into Recession in 2008? 347

CHAPTER 14 Aggregate Expenditure Multiplier 353

CHAPTER CHECKLIST 353

- 14.1 Expenditure Plans and Real GDP** 354
 The Consumption Function 354
 Imports and Real GDP 358
CHECKPOINT 14.1 359

- 14.2 Equilibrium Expenditure** 360
 Induced Expenditure and Autonomous Expenditure 360
 Aggregate Planned Expenditure and Real GDP 360
 Equilibrium Expenditure 362
 Convergence to Equilibrium 363
CHECKPOINT 14.2 365

- 14.3 Expenditure Multipliers** 366
 The Basic Idea of the Multiplier 366
 The Size of the Multiplier 367
 The Multiplier and the MPC 367
 The Multiplier, Imports, and Income Taxes 368
 Business-Cycle Turning Points 370
CHECKPOINT 14.3 371

- 14.4 The AD Curve and Equilibrium Expenditure** 372
 Deriving the AD Curve from Equilibrium Expenditure 372
CHECKPOINT 14.4 374

CHAPTER SUMMARY 375

CHAPTER CHECKPOINT 376

- **EYE on the U.S. ECONOMY**
 The U.S. Consumption Function 358
- **EYE on the PAST**
 Say's Law and Keynes' Principle of Effective Demand 364
- **EYE on YOUR LIFE**
 Looking for Multipliers 369
- **EYE on the MULTIPLIER**
 How Big Is the Government Expenditure Multiplier? 370

CHAPTER 15 The Short-Run Policy Tradeoff 379

CHAPTER CHECKLIST 379

- 15.1 The Short-Run Phillips Curve** 380
 Aggregate Supply and the Short-Run Phillips Curve 381
 Aggregate Demand Fluctuations 383
 Why Bother with the Phillips Curve? 384
CHECKPOINT 15.1 385

15.2 Short-Run and Long-Run Phillips Curves 386

- The Long-Run Phillips Curve 386
- Expected Inflation 387
- The Natural Rate Hypothesis 388
- Changes in the Natural Unemployment Rate 389
- Have Changes in the Natural Unemployment Rate Changed the Tradeoff? 390

CHECKPOINT 15.2 392

15.3 Influencing Inflation and Unemployment 393

- Influencing the Expected Inflation Rate 393
- Targeting the Unemployment Rate 394

CHECKPOINT 15.3 396

CHAPTER SUMMARY 397

CHAPTER CHECKPOINT 398

EYE on the GLOBAL ECONOMY

Inflation and Unemployment 383

EYE on the PAST

The U.S. Phillips Curve 384

EYE on the PAST

A Live Test of the Natural Rate Hypothesis 389

EYE on the TRADEOFF

Can We Have Low Unemployment *and* Low Inflation? 391

EYE on YOUR LIFE

The Short-Run Tradeoff in Your Life 395

PART 6 MACROECONOMIC POLICY

CHAPTER 16
Fiscal Policy 401

CHAPTER CHECKLIST 401

16.1 The Federal Budget 402

- The Institutions and Laws 402
- Budget Balance and Debt 402
- The Federal Budget in Fiscal 2017 403
- A Fiscal Policy Challenge 406
- Generational Accounting 406

CHECKPOINT 16.1 408

16.2 Fiscal Stimulus 409

- Fiscal Policy and Aggregate Demand 409
- Automatic Fiscal Policy 409
- Cyclical and Structural Budget Balances 410
- Discretionary Fiscal Policy 411
- A Successful Fiscal Stimulus 412
- Limitations of Discretionary Fiscal Policy 414

CHECKPOINT 16.2 415

16.3 The Supply Side: Potential GDP and Growth 416

- Full Employment and Potential GDP 416
- Fiscal Policy, Employment, and Potential GDP 416
- Fiscal Policy and Potential GDP: A Graphical Analysis 418
- Taxes, Deficits, and Economic Growth 419
- The Supply-Side Debate 420
- Long-Run Fiscal Policy Effects 421

CHECKPOINT 16.3 422

CHAPTER SUMMARY 423

CHAPTER CHECKPOINT 424

EYE on the GLOBAL ECONOMY

The U.S. Budget in Global Perspective 404

EYE on the PAST

Federal Tax Revenues, Outlays, Deficits, and Debt 405

EYE on the U.S. ECONOMY

Fiscal and Generational Imbalances 407

EYE on the U.S. ECONOMY

The U.S. Structural and Cyclical Budget Balances 410

EYE on FISCAL STIMULUS

Can Fiscal Stimulus End a Recession? 413

EYE on the GLOBAL ECONOMY

Some Real-World Tax Wedges 417

EYE on YOUR LIFE

Your Views on Fiscal Policy and How Fiscal Policy Affects You 421

CHAPTER 17
Monetary Policy 427

CHAPTER CHECKLIST 427

17.1 How The Fed Conducts Monetary Policy 428

- Monetary Policy Objectives 428
- Operational “Maximum Employment” Goal 429
- Operational “Stable Prices” Goal 429
- Responsibility for Monetary Policy 430

- Policy Instrument 430
- Hitting the Federal Funds Rate Target 432
- Restoring Financial Stability in a Financial Crisis 433
- CHECKPOINT 17.1** 435

17.2 Monetary Policy Transmission 436

- Quick Overview 436
- Interest Rate Changes 436
- Exchange Rate Changes 438
- Money and Bank Loans 438
- The Long-Term Real Interest Rate 439
- Expenditure Plans 439
- The Fed Fights Recession 440
- The Fed Fights Inflation 442
- Loose Links and Long and Variable Lags 444
- A Final Reality Check 444
- CHECKPOINT 17.2** 445

17.3 Alternative Monetary Policy Strategies 446

- An Interest Rate Rule 446
- A Monetary Base Rule 446
- Inflation Targeting 447
- Money Targeting Rule 449
- CHECKPOINT 17.3** 450

CHAPTER SUMMARY 451

CHAPTER CHECKPOINT 452

- **EYE on the FED IN A CRISIS**
Did the Fed Save Us From Another Great Depression? 434
- **EYE on the U.S. ECONOMY**
The Fed's Decisions Versus Two Rules 447
- **EYE on the GLOBAL ECONOMY**
Inflation Targeting Around the World 448
- **EYE on YOUR LIFE**
Your Views on Monetary Policy and How Monetary Policy Affects You 449

CHAPTER 18 International Trade Policy 455

CHAPTER CHECKLIST 455

18.1 How Global Markets Work 456

- International Trade Today 456
- What Drives International Trade? 456
- Why the United States Imports T-Shirts 458
- Why the United States Exports Airplanes 459
- Winners, Losers, and Net Gains From Trade 460
- CHECKPOINT 18.1** 462

18.2 International Trade Restrictions 463

- Tariffs 463
- Import Quotas 466
- Other Import Barriers 467
- CHECKPOINT 18.2** 468

18.3 The Case Against Protection 469

- Three Traditional Arguments for Protection 469
- Four Newer Arguments for Protection 471
- Why Is International Trade Restricted? 472
- CHECKPOINT 18.3** 474

CHAPTER SUMMARY 475

CHAPTER CHECKPOINT 476

- **EYE on the U.S. ECONOMY**
U.S. Exports and Imports 457
- **EYE on GLOBALIZATION**
Who Wins and Who Loses from Globalization? 461
- **EYE on the PAST**
The History of U.S. Tariffs 463
- **EYE on YOUR LIFE**
International Trade 473

CHAPTER 19 International Finance 479

CHAPTER CHECKLIST 479

19.1 Financing International Trade 480

- Balance of Payments Accounts 480
- Borrowers and Lenders, Debtors and Creditors 482
- Current Account Balance 483
- CHECKPOINT 19.1** 486

19.2 The Exchange Rate 487

- Demand in the Foreign Exchange Market 488
- The Law of Demand for Foreign Exchange 488
- Changes in the Demand for Dollars 489
- Supply in the Foreign Exchange Market 491
- The Law of Supply of Foreign Exchange 491
- Changes in the Supply of Dollars 492
- Market Equilibrium 494
- Exchange Rate Expectations 496
- Purchasing Power Parity 496
- Monetary Policy and the Exchange Rate 498
- Pegging the Exchange Rate 498
- The People's Bank of China in the Foreign Exchange Market 499

CHECKPOINT 19.2 502

CHAPTER SUMMARY 503

CHAPTER CHECKPOINT 504

■ **EYE on the U.S. ECONOMY**

The U.S. Balance of Payments 481

■ **EYE on the GLOBAL ECONOMY**

Current Account Balances Around the World 485

■ **EYE on the DOLLAR**

Why Does Our Dollar Fluctuate? 495

■ **EYE on the GLOBAL ECONOMY**

Purchasing Power Parity 497

■ **EYE on the GLOBAL ECONOMY**

The Managed Yuan 501

■ **EYE on YOUR LIFE**

Your Foreign Exchange Transactions 501

Glossary G-1

Index I-1

Credits C-1

Preface



Students know that throughout their lives they will make economic decisions and be influenced by economic forces. They want to understand the economic principles that can help them navigate these forces and guide their decisions. *Foundations of Macroeconomics* is our attempt to satisfy this want.

The response to our earlier editions from hundreds of colleagues across the United States and throughout the world tells us that most of you agree with our view that the principles course must do four things well. It must

- Motivate with compelling issues and questions
- Focus on core ideas
- Steer a path between an overload of detail and too much left unsaid
- Encourage and aid learning by doing

The Foundations icon with its four blocks (on the cover and throughout the book) symbolizes this four-point approach that has guided all our choices in writing this text and creating its comprehensive teaching and learning supplements.

WHAT'S NEW IN THE EIGHTH EDITION

New in this Eighth Edition revision are: A further fine-tuning of the content; an enhanced focus on outcome-driven teaching and learning; and a further large investment in enhanced digital features to bring economics to life and provide an exciting interactive experience for the student on all platforms and devices.

■ Fine-Tuning the Content

The content of this revision is driven by the drama of the extraordinary period of economic history in which we are living and its rich display of events and forces through which students can be motivated to discover the economic way of thinking. Persistent slow economic growth; increasing concentration of wealth; headwinds from Europe's stagnant economy and the UK decision to leave the economic union (Brexit); ongoing tensions arising from the loss of American jobs to offshore outsourcing and the political popularity of trade protection; a slowing pace of China's expansion; enhanced concern about carbon emission and climate change; relentless pressure on the federal budget from the demands of an aging

population and a sometimes dysfunctional Congress with its associated rising government debt; the dilemma posed by slow, almost decade-long recovery from the global financial crisis and recession and the related question of when and how fast to exit an era of extreme monetary stimulus. These are just a few of these interest-arousing events. All of them feature at the appropriate points in our new edition.

Every chapter contains many small changes, all designed to enhance clarity and currency, and the text and examples are all thoroughly updated to reflect the most recently available data and events.

Because the previous edition's revision was so extensive and well-received, we have limited our interventions and changes in this Eighth Edition to addressing the small number of issues raised by our reviewers and users, ensuring that we are thoroughly up-to-date, and focusing on the new digital tools that we've just described. Nonetheless, some changes that we now summarize are worth noting.

■ Notable Content Changes

In Chapter 1, *Getting Started*, we have added a new section, *Economics as a Life Skill*, which explains how economics is used as a decision tool, the scientific method the subject employs, and economics as an aid to critical thinking. A new *Eye on Your Life* looks at the BLS data on student time allocation (which contains some surprises).

In Chapter 3, *The Economic Problem*, we show explicitly how the outward-bowed production possibilities frontier arises from exploiting comparative advantage.

Chapter 6, *Jobs and Unemployment*, is motivated by the question of whether we are back at full employment. In seeking an answer, the chapter adds to the standard list of job market indicators the new Z-Pop measure of the percentage of the population that is fully occupied.

Chapter 7, *The CPI and the Cost of Living*, explains and presents data on the new "Sticky Price CPI" and its related "Flexible Price CPI" as an attempt to measure the underlying inflation rate.

In Chapter 9, *Economic Growth*, we have added an account of who gets the benefits of economic growth with a dramatic demonstration of the gains by the top one percent compared with the gains of the other 99 percent.

Chapter 16, *Fiscal Policy*, has a new and expanded explanation of the concepts of fiscal imbalance and generational imbalance and the magnitudes of these imbalances in the United States today.

Chapter 17, *Monetary Policy*, has a new discussion of the rules versus discretion dichotomy and a description of both the Taylor interest rate rule and the McCallum monetary base growth rate rule.

■ Outcome-Driven Teaching and Learning

An overarching revision message is that this text, its customized MyEconLab, and classroom resources are built to support an outcome-driven teaching and learning program in which the principles of economics course strengthens

- Problem solving
- Critical thinking
- Decision making
- Citizenship

Problem solving is central to the *Foundations* story. A Checkpoint at the end of each topic, typically three per chapter, provides a pause and

opportunity to check understanding with problems, one of which is driven by a recent news clip, and worked solutions. A series of MyEconLab Solutions Videos then give the student an alternative way of reviewing the solutions to these problems.

Critical thinking is encouraged and supported through a series of interactive exercises in MyEconLab. In each chapter, there is one exercise that is based on the question or issue that opens and motivates the chapter, and a second that builds from an *Economics in Your Life* feature.

■ Enhanced eText

The new Enhanced Pearson eText gives students access to their textbook anytime, anywhere. In addition to note-taking, highlighting, and bookmarking, the Pearson eText offers interactive and sharing features. Students actively read and learn through embedded and auto-graded practice, real-time data-graphs, animations, author videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

The new eText includes:

- A Big Picture Video that motivates and summarizes each chapter and provides an outline answer to the chapter’s motivating question.
- A series of Concept Videos that illustrate and explain the key ideas in each section of a chapter. These videos also contain animations and explanations of each figure, which can be played separately.
- A series of Solutions Videos that walk the student through the solutions to the Practice Problems and In the News exercises in each Checkpoint.
- Interactive data graphs that display real-time data from the St. Louis Federal Reserve data base, FRED.
- Study Plan links that provide opportunities for more practice with problems similar to those in the text, some with real-time FRED data, that give targeted feedback to guide the student in answering the exercises.
- Key Terms Quiz links that provide opportunities for students to check their knowledge of the definitions and uses of the key terms.

THE FOUNDATIONS VISION

■ Focus on Core Concepts

Each chapter of *Foundations* concentrates on a manageable number of main ideas (most commonly three or four) and reinforces each idea several times throughout the chapter. This patient, confidence-building approach guides students through unfamiliar terrain and helps them to focus their efforts on the most important tools and concepts of our discipline.

■ Many Learning Tools for Many Learning Styles

Foundations’ integrated print and electronic package builds on the basic fact that students have a variety of learning styles. Students have powerful tools at their fingertips: Within the eText, they can get an immediate sense of the content of a chapter by playing the Big Picture video; learn the key ideas by playing the Concept videos; and get a quick walkthrough of the Checkpoint Practice Problems and In the News exercises with the Solutions videos.

In MyEconLab, students can complete all Checkpoint problems and In the News exercises online and get instant feedback; work with interactive graphs and real-time data graphs; assess their skills by taking Practice Tests; receive a personalized Study Plan; and step-by-step help through the learning aid called “Help Me Solve This.”

■ Diagrams That Tell the Whole Story

We developed the style of our diagrams with extensive feedback from faculty focus-group participants and student reviewers. All of our figures make consistent use of color to show the direction of shifts and contain detailed, numbered captions designed to direct students’ attention step-by-step through the action.

Because beginning students of economics are often apprehensive about working with graphs, we have made a special effort to present material in as many as three ways—with graphs, words, and tables—in the same figure. In an innovation that seems necessary, but is to our knowledge unmatched, nearly all of the information supporting a figure appears on the same page as the figure itself. No more flipping pages back and forth!

■ Real-World Connections That Bring Theory to Life

Students learn best when they can see the purpose of what they are studying, apply it to illuminate the world around them, and use it in their lives.

Eye On boxes offer fresh new examples to help students see that economics is everywhere. Current and recent events appear in *Eye on the U.S. Economy* boxes; we place current U.S. economic events in global and historical perspectives in our *Eye on the Global Economy* and *Eye on the Past* boxes; and we show how students can use economics in day-to-day decisions in *Eye on Your Life* boxes.

Each chapter-opening question is answered in an *Eye On* box that helps students see the economics behind a key issue facing the world and highlights a major aspect of the chapter's story.

ORGANIZATION

We have organized the sequence of material and chapters in what we think is the most natural order in which to cover the material. But we recognize that there are alternative views on the best order. We have kept this fact and the need for flexibility firmly in mind throughout the text. Many alternative sequences work, and the Flexibility Chart on p. xxiv explains the alternative pathways through the chapters. In using the flexibility information, keep in mind that the best sequence is the one in which we present the material. And even chapters that the flexibility charts identify as strictly optional are better covered than omitted.

MYECONLAB

MyEconLab

MyEconLab has been designed and refined with a single purpose in mind: to create those moments of understanding that transform the difficult into the clear and obvious. With comprehensive homework, quiz, test, activity, and

tutorial options, instructors can manage all their assessment needs in one program.

- All of the Checkpoint and Chapter Checkpoint Problems and Applications can be assigned and automatically graded in MyEconLab.
- Extra problems and applications, including algorithmic, draw-graph, and numerical exercises can be used for student practice or instructor assignment.
- Problems and applications that use real-time data continuously update directly from a feed to the Federal Reserve Bank of St. Louis.
- Test Item File questions can be assigned in quiz, test, or homework.
- The Custom Exercise Builder gives instructors the flexibility to create their own problems for assignment.
- The Gradebook records each student’s performance and time spent on the Tests and Study Plan and generates reports by student or by chapter.

New for the Eighth Edition is an Enhanced Pearson eText, which includes embedded and auto-graded practice, real-time data graphs, animations, videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

With the Pearson eText 2.0 mobile app students can access the Enhanced eText and all its functionality from their computer, tablet, or cell phone. Because the student's progress is synced across all of their devices, they can stop what they're doing on one device and pick up again later on another one—without breaking their stride.

■ Features of the Enhanced eText

Big Picture Videos Big Picture videos, tied to the Chapter Checklist, set the stage for the main concept that will be introduced throughout the chapter. Students can use these videos to prepare for today’s lecture or to help them focus on main chapter ideas.

DEMAND and SUPPLY: THE BIG PICTURE

Buyers like a low price, and the lower the price, the greater is the quantity they plan to buy—the **law of demand**.

Sellers like a high price, and the higher the price, the greater is the quantity they plan to sell—the **law of supply**.

Too high a price brings a surplus, and too low a price brings a shortage.

When there is a surplus, the price falls; and when there is a shortage, the price rises—the **law of market forces**.

MyEconLab Concept Video

4.2 SUPPLY

Quantity supplied
The amount of any good, service, or resource that people are willing and able to sell during a specified period at a specified price.

A market has two sides. On one side are the buyers, or demanders, that we've just studied. On the other side of the market are the sellers, or suppliers. We now study the forces that determine suppliers' plans.

The **quantity supplied** of a good, service, or resource is the amount that people are willing and able to sell during a specified period at a specified price. For example, when the price of spring water is \$1.50 a bottle, a spring owner decides to sell 2,000 bottles a day. The 2,000 bottles a day is the quantity supplied of spring water by this individual producer. (As in the case of demand, the quantity supplied is measured as an amount *per unit of time*.)

Many things influence selling plans, and one of them is the price. We look first at the relationship between quantity supplied of a good and its price. To study this relationship, we keep all other influences on selling plans the same, and we ask: Other things remaining the same, how does the quantity supplied of a good change as its price varies? The law of supply provides the answer.

■ The Law of Supply

The **law of supply** states

Other things remaining the same, if the price of a good rises, the quantity supplied of that good increases; and if the price of a good falls, the quantity supplied of that good decreases.

So the law of supply states that when all other things remain the same, if the

Concept Videos Concept videos accompany every major section of each chapter and are designed to briefly present the major concepts and graphical tools covered within key sections. Using text, audio, and animation, Concept videos enable students with different learning styles to efficiently study and review key concepts of the chapter.

Animations Every textbook figure includes a step-by-step animation, with audio, to help students learn the intuition behind reading and interpreting graphs. These animations may be used for review, or as an instructional aid in the classroom. Figures labeled *MyEconLab Real-Time Data* update using the most recent data available from the Federal Reserve Bank of St. Louis's FRED site.

Embedded MyEconLab Assessment Every Checkpoint Practice Problem, every In the News problem, and every Study Plan Problem and Application in the enhanced eText can be worked by the student directly from the eText page on which it occurs. These problems are auto-graded and feed into the MyEconLab's Study Plan, where students receive recommendations based upon their performance.

Aqua Springs makes the following four statements about bottled spring water. Which statement best describes the firm's **quantity supplied** in the bottled water market?

- A We would sell more water if the demand for it were greater.
- B At a price of \$1 gallon, we plan to sell 2,000 gallons per day.
- C We'll switch from plain water to flavored water if flavored is more profitable.
- D If we could get a higher price, we'd bottle more water.

Fantastic!

The quantity supplied is the amount of any good, service, or resource that people are willing and able to sell during a specified period at a specified price. So when Aqua Springs says "At a price of \$1 gallon, we plan to sell 2,000 gallons per day," the firm is describing a quantity supplied.

Done

Key Terms Quiz The Key Terms Quiz, accessible from each Checkpoint, allows students to check their understanding of key chapter concepts before moving onto the next section. The Interactive Glossary that supports the enhanced eText provides the key term definition, an example, and related terms.

CHECKPOINT 7.1

MyEconLab: Study Plan 7.1
Key Terms Quiz
Solutions Video

Explain how a price ceiling works, and why a rent ceiling creates a housing shortage and is inefficient and unfair.

Practice Problems

Figure 1 shows the rental market for apartments in Corsicana, Texas.

- What is the rent and how many apartments are rented? If a rent ceiling of \$900 a month is set, what is the rent and how many apartments are rented?
- If the city government imposes a rent ceiling of \$600 a month, what is the rent and how many apartments are rented? If a black market develops, explain how high the black market rent could be.
- If the city government imposes a rent ceiling of \$600 a month and enforces it, is the housing market efficient? What is the deadweight loss? Is the housing market fair? Explain your answer.

In the News

A gas price ceiling
China has cut the price of natural gas and may install a price ceiling that prohib-

FIGURE 1
Rent (dollars per month)

Quantity (thousands of apartments)

Solutions Videos Every Checkpoint Practice problem and In the News problem is supported by a Solutions video that provides a step-by-step working of the problem, including graphical analysis. Text, audio, and animation ensure that a student understands how to set-up and solve each of the problems.

■ MyEconLab also includes:

Economics in the News Economics in the News is a turn-key solution to bringing current news into the classroom. Updated daily during the academic year, we upload two relevant articles (one micro, one macro) and provide questions that may be assigned for homework or for classroom discussion.

Current News Each week during the academic year, we upload multi-part microeconomic and macroeconomic exercises, with links to relevant articles, into the MyEconLab assignment manager. These enable instructors to bring current issues and events into the course with easy to assign and auto-graded exercises.

Real-Time Data Analysis Exercises (FRED) Easy to assign and automatically graded, Real-Time Data Analysis exercises use up-to-the-minute, real-time macroeconomic data. These exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED site, so every time FRED posts new data, students see new data. As a result, Real-Time Data Analysis exercises offer a no-fuss solution for instructors who want to make the most recent data a central part of their macro course. End-of-chapter exercises accompanied by the Real-Time Data Analysis icon (📊) include Real-Time Data versions in MyEconLab. Select in-text figures, labeled Real-time data, update in the eText using FRED data.

Digital Interactives: Economic principles are not static ideas, and learning them shouldn't be either! Digital Interactives are dynamic and engaging assessment activities that promote critical thinking and application of key economic principles.

Each Digital Interactive has 3 to 5 progressive levels and requires approximately 20 minutes to explore, apply, compare, and analyze each topic. Many Digital Interactives include real-time data from FRED™ allowing professors and students to display, in graph and table form, up-to-the-minute data on key macro variables.

Digital Interactives can be assigned and graded within MyEconLab, or used as a lecture tool to encourage engagement, classroom conversation, and group work.

Topics include:

- Comparative Advantage
- Opportunity Cost
- Demand & Supply
- GDP
- Unemployment
- Consumer Price Index/Inflation
- Monetary Policy

Math Review Exercises in MyEconLab—MyEconLab now offers an array of assignable and auto-graded exercises that cover fundamental math concepts. Geared specifically toward principles economics students, these exercises aim to increase student confidence and success in these courses. Our new Math Review is accessible from the assignment manager and contains more than 150 exercises for homework, quiz, and test use.

Learning Catalytics Learning Catalytics helps you generate class discussion, customize your lecture, and promote peer-to-peer learning with real-time analytics. As a student response tool, Learning Catalytics uses students' smartphones, tablets, or laptops to engage them in more interactive tasks and thinking.

- NEW! Upload a full PowerPoint® deck for easy creation of slide questions.
- Help your students develop critical thinking skills.
- Monitor responses to find out where your students are struggling.
- Rely on real-time data to adjust your teaching strategy.
- Automatically group students for discussion, teamwork, and peer-to-peer learning.

Experiments in MyEconLab Experiments are a fun and engaging way to promote active learning and mastery of important economic concepts. Pearson's Experiments program is flexible and easy for instructors to assign and students to use.

- Single-player experiments, available to assign, allow your students to play against virtual players from anywhere at anytime so long as they have an internet connection.
- Multiplayer experiments allow you to assign and manage a real-time experiment with your class.
- Pre and post-questions for each experiment are available for assignment in MyEconLab.
- Experiments are auto-graded using algorithms that objectively evaluate a student's economic gain and performance during the experiment.

AACSB and Learning Outcomes All end-of-chapter and Test Item File questions are tagged in two ways: to AACSB standards and to discipline-specific Learning Outcomes. These two separate tagging systems allow professors to build assessments around desired departmental and course outcomes and track results in MyEconLab's gradebook.

Personalized Study Plan The Personalized Study Plan provides recommendations for each of your students based on his or her ability to master the learning objectives in your course. This allows students to focus their study time by pinpointing the precise areas they need to review and allowing them to use customized practice and learning aids—such as videos, eText, tutorials, and more—to get them back on track. The Study Plan also ensures that your students are mastering the concepts, not just guessing the answers.

Using the report available in the Gradebook, you can then tailor course lectures to prioritize the content where students need the most support—offering you better insight into classroom and individual performance.

Dynamic Study Modules Dynamic Study Modules help students study effectively on their own by continuously assessing their activity and performance in real time. Here's how it works: students complete a set of questions with a unique answer format that also asks them to indicate their confidence level. Questions repeat until the student can answer them all correctly and confidently. Once completed, Dynamic Study Modules explain the concept using materials from the text. These are available as graded assignments prior to class, and accessible on smartphones, tablets, and computers.

NEW! Instructors can now remove questions from Dynamic Study Modules to better fit their course.

SUPPORT MATERIALS FOR INSTRUCTORS AND STUDENTS

Foundations of Macroeconomics is accompanied by the most comprehensive set of teaching and learning tools ever assembled. Each component of our package is organized by Checkpoint topic for a tight, seamless integration with both the textbook and the other components. In addition to authoring the MyEconLab Study Plan and Assignment problems, PowerPoint resources, and Video scripts, we have helped in the reviewing and revising of the Solutions Manual, Instructor's Manual, and Test Item Files to ensure that every element of the package achieves the consistency that students and teachers need.

■ PowerPoint Resources

We have created the PowerPoint resources based on our 24 years of experience using this tool in our own classrooms. We have created four sets of PowerPoint presentations for instructors. They are:

- Lecture notes with full-color, animated figures, and tables from the textbook
- Figures and tables from the textbook, animated with step-by-step walk-through for instructors to use in their own personal slides
- *Eye On* features
- Alternative micro lecture notes with full-color, animated figures and tables that use examples different from those in the textbook

A student version of the lecture notes is also available on MyEconLab.

■ Instructor's Manual

The Instructor's Manual, written by Luke Armstrong and reviewed by Mark Rush, contains chapter outlines and road maps, additional exercises with solutions, a comprehensive Chapter Lecture resource, and a virtual encyclopedia of suggestions on how to enrich class presentation and use class time efficiently. The Instructor's Manual has been updated to reflect changes in the main text as well as infused with a fresh and intuitive approach to teaching this course. The Instructor's Manual is available for download in Word and PDF formats.

■ Solutions Manual

The Solutions Manual, written by Mark Rush and checked for accuracy by Jeannie Gillmore, contains the solutions to all Chapter Checkpoint Study Plan Problems and Applications, Instructor Assignable Problems and Applications, and the Multiple Choice Quiz. The Solutions Manual is available for download in Word and PDF formats.

■ Three Test Item Files and TestGen

More than 6,000 multiple-choice, numerical, fill-in-the-blank, short answer, essay, and integrative questions make up the three Test Item Files that support *Foundations of Macroeconomics*. Mark Rush reviewed and edited the updated and new questions from three dedicated principles instructors to form one of the most comprehensive testing systems on the market. Our questions were written by Svitlana Maksymenko (University of Pittsburgh) and David Black (University of Toledo). The entire set of questions is available for download in Word, PDF, and TestGen formats.

All three Test Item Files are available in test generator software (TestGen with QuizMaster). TestGen's graphical interface enables instructors to view, edit, and add questions; transfer questions to tests; and print different forms of tests. Instructors also have the option to reformat tests with varying fonts and styles, margins, and headers and footers, as in any word-processing document. Search and sort features let the instructor quickly locate questions and arrange them in a preferred order. QuizMaster, working with your school's computer network, automatically grades the exams, stores the results on disk, and allows the instructor to view and print a variety of reports.

■ Instructor's Resource Center

This page on the Pearson Higher Education website (www.pearsonhighered.com/IRC) contains the Instructor's Manual, Solutions Manual, and Test Item Files in Word and PDF formats. It also contains the Computerized Test Item Files (with a TestGen program installer) and PowerPoint resources. It is compatible with both Windows and Macintosh operating systems.

For access or more information, contact your local Pearson representative or request access online at the Instructor Resource Center.

ACKNOWLEDGMENTS

Working on a project such as this one generates many debts that can never be repaid. But they can be acknowledged, and it is a special pleasure to be able to do so here and to express our heartfelt thanks to each and every one of the following long list, without whose contributions we could not have produced *Foundations*.

Mark Rush again coordinated, managed, and contributed to our Solutions Manual, Instructor's Manual, and Test Item Files. He assembled, polished, wrote, and rewrote these materials to ensure their close consistency with the text. He and we were in constant contact as all the elements of our text and package came together. Mark also made many valuable suggestions for improving the text and the Checkpoint Problems. His contribution went well beyond that of a reviewer, and his effervescent sense of humor kept us all in good spirits along the way.

Working closely with Mark, Luke Armstrong wrote content for the Instructor's Manual. Svitlana Maksymenko and David Black authored new questions for the Test Item Files.

Luke Armstrong and Carol Dole recorded the narrations that accompany the Big Picture, Concept, and Solutions Videos in the eText. The engaging style and clarity of these outstanding teachers makes these videos a powerful learning tool.

Fred Bounds (Georgia Perimeter College) and Carol Dole provided outstanding reviews of the Study Plan and Assessment problems in MyEconLab that helped to make our exercises as effective as possible.

The ideas from which *Foundations* grew began to form over dinner at the Andover Inn in Andover, Massachusetts, with Denise Clinton and Sylvia Mallory. We gratefully acknowledge Sylvia's role not only at the birth of this project but also in managing its initial development team. Denise was an ongoing inspiration for 15 years, and we are privileged to have had the benefit of her enormous experience.

The success of *Foundations* owes much to its outstanding editors: Director of Portfolio Management, Adrienne D'Ambrosio, and Portfolio Manager, Ashley Bryan. Adrienne's acute intelligence and sensitive understanding of the market have helped sharpen our vision of this text and package over several editions, and Ashley has brought a fresh perspective to this Eighth edition revision. The value-added of Adrienne and Ashley is huge. It has been, and we hope it will for many future editions remain, a joy to work with them.

Jonathan Boylan created the new impressive cover design and converted the raw ideas of our brainstorming into an outstandingly designed text.

Melissa Honig, Digital Studio Producer, and Noel Lotz, Digital Content Team Lead have set a new standard for online learning and teaching resources. They have been sources of high energy, good sense, and level-headed advice and quickly found creative solutions to all our technology problems.

Nancy Freihofer, our outstanding, ever calm, Content Producer, worked with a talented team at Integra, Project Editor, Heather Johnson, and designer, art coordinator, and typesetter. Our copy editor, Catherine Baum, gave our work a thorough review and helpful polish, and our proofreader ensured the most error-free text we have yet produced.

Our marketing team, comprised of Ramona Elmer, Tricia Murphy, and Brad Parkins, has been an integral part of this revision process. They have provided great knowledge and strategies to help continuously improve our suite of materials and keep them relevant and valuable in these ever-changing times.

Richard Parkin, our technical illustrator, created the figures in the text, the dynamic figures in the eText, the animated figures in the PowerPoint presentations, created the animations for and assembled the enhanced eText videos, and contributed many ideas to improving the clarity of our illustrations in all media.

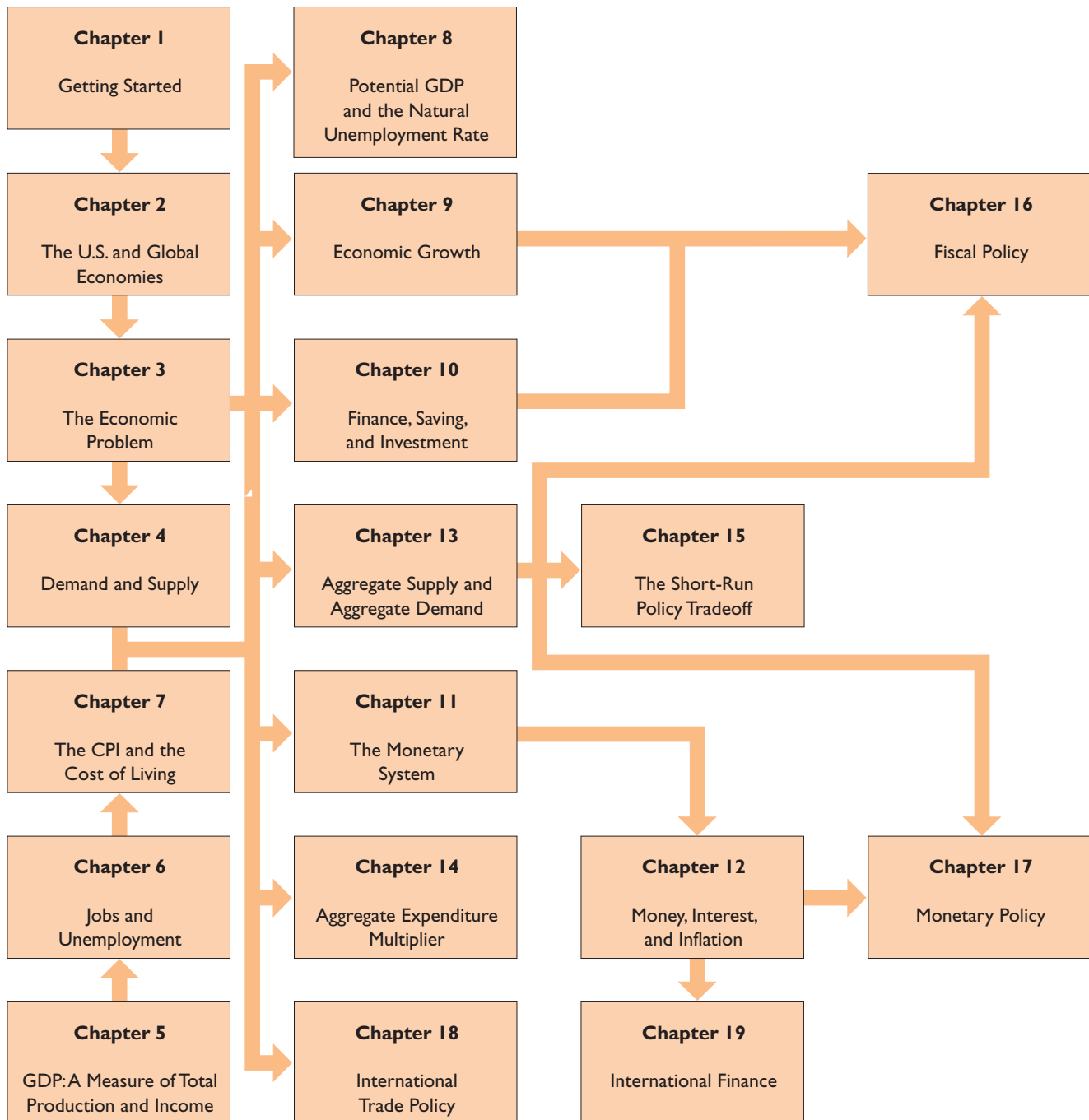
Jeannie Gillmore, our long-standing personal assistant, worked closely with us to create MyEconLab Study Plan and Assignment problems and to ensure the highest standards for our feedbacks and “help me solve this” question help.

Finally, our reviewers, whose names appear on the following pages, have made an enormous contribution to this text and MyEconLab resources. Once again we find ourselves using superlatives, but they are called for. In the many texts that we’ve written, we’ve not seen reviewing of the quality that we enjoyed on this revision. It has been a pleasure (if at times a challenge) to respond constructively to their many excellent suggestions.

Robin Bade
Michael Parkin
London, Ontario, Canada
robin@econ100.com
mparkin@uwo.ca

FOUNDATIONS OF MACROECONOMICS: FLEXIBILITY CHART

Flexibility



Start here ...

... then jump to any of these ...

... and jump to any of these after doing the prerequisites indicated

This page intentionally left blank

Reviewers

- Eunice Akoto, Henderson State University
Mehdi Arman, Columbia State Community College
Luke Armstrong, Lee College
Michael Aubry, Cuyamaca College
Bizuaeyehu Bedane, Southern Illinois University at Carbondale
Victor Claar, Henderson State University
Earl Davis, Nicholls State University
Carol Dole, Jacksonville University
Byron Gangnes, University of Hawaii at Manoa
Leon Hoke, University of Tampa
Christopher Jeffords, Indiana University of Pennsylvania; University of Connecticut
Stephen Jerbic, San Jose State University
Vicki King-Skinner, Coastal Carolina University
David Manifold, Caldwell Community College & Technical Center
Michael Nuwer, State University of New York at Potsdam
Abdulhamid Sukar, Cameron University
Lisa Takeyama, San Francisco State University
Benjamin Zamzow, Campbell University
Ting Zhang, University of Baltimore
Alfredo A. Romero Aguirre, North Carolina A&T State University
Seemi Ahmad, Dutchess Community College
William Aldridge, Shelton State Community College
Rashid B. Al-Hmoud, Texas Tech University
Neil Alper, Northeastern University
Nejat Anbarci, Deakin University
J.J. Arias, Georgia College & State University
Luke A. Armstrong, Lee College
Leland Ash, Skagit Valley College
Ali Ataiifar, Delaware County Community College
John Baffoe-Bonnie, Pennsylvania State University, Delaware County Campus
A. Paul Ballantyne, University of Colorado
Tyra D. Barrett, Pellissippi State Community College
Sue Bartlett, University of South Florida
Gerald Baumgardner, Penn College
Klaus Becker, Texas Tech University
Clive Belfield, Queen's College, City University of New York
William K. Bellinger, Dickinson College
John Bethune, Barton College
Prasun Bhattacharjee, East Tennessee State University
Gautam Bhattacharya, University of Kansas
Gerald W. Bialka, University of North Florida
David Bivin, Indiana University–Purdue University at Indianapolis
Geoffrey Black, Boise State University
Carey Anne Borkoski, Arundel Community College
Jurgen Brauer, Augusta State University
Greg Brock, Georgia Southern University
Barbara Brogan, Northern Virginia Community College
Bruce C. Brown, California State Polytechnic University, Pomona
Christopher Brown, Arkansas State University
James O. Brown, Delta State University
Brian Buckley, Clemson University
Donald Bumpass, Sam Houston State University
Seewoonundun Bunjun, East Stroudsburg University
Nancy Burnett, University of Wisconsin at Oshkosh
James L. Butkiewicz, University of Delaware
Barbara Caldwell, Saint Leo University
Bruce Caldwell, University of North Carolina, Greensboro
Joseph Calhoun, Florida State University
Robert Carlsson, University of South Carolina
Shawn Carter, Jacksonville State University
Regina Cassidy, Valencia Community College
Jack Chambless, Valencia Community College
Joni Charles, Southwest Texas State University
Anoshua Chaudhuri, San Francisco State University
Robert Cherry, Brooklyn College
Chi-Young Choi, University of New Hampshire
Paul Cichello, Xavier University
Quentin Ciolfi, Brevard Community College
Victor V. Claar, Henderson State University
Jane L. Cline, Forsyth Technical Community College
Jim Cobbe, Florida State University
John Cochran, University of Chicago
Mike Cohick, Collin County Community College
Ludovic Comeau, De Paul University
Carol Conrad, Cerro Coso Community College
Christopher Cornell, Vassar College
Richard Cornwall, University of California, Davis
Kevin Cotter, Wayne State University
Erik Craft, University of Richmond
Tom Creahan, Morehead State University
Elizabeth Crowell, University of Michigan at Dearborn
Susan Dadres, Southern Methodist University
David Davenport, McLennan Community College
Troy Davig, College of William and Mary
Jeffrey Davis, ITT Technical Institute (Utah)
Lewis Davis, Union College
Dennis Debrecht, Carroll College
Al DeCooke, Broward Community College
Jason J. Delaney, Georgia Gwinnett College
Vince DiMartino, University of Texas at San Antonio
Vernon J. Dobis, Minnesota State University–Moorhead
Carol Dole, Jacksonville University
Kathleen Dorsainvil, American University
John Dorsey, University of Maryland, College Park
Amrik Singh Dua, Mt. San Antonio College
Marie Duggan, Keene State College

- Allen Dupont, North Carolina State University
 David Eaton, Murray State University
 Kevin J. Egan, University of Toledo
 Harold W. Elder, University of Alabama
 Harry Ellis, University of North Texas
 Stephen Ellis, North Central Texas College
 Carl Enomoto, New Mexico State University
 Chuen-mei Fan, Colorado State University
 Chris Fant, Spartanburg Community College
 Elena Ermolenko Fein, Oakton Community College
 Gary Ferrier, University of Arkansas
 Rudy Fichtenbaum, Wright State University
 Donna K. Fisher, Georgia Southern University
 Kaya Ford, Northern Virginia Community College
 Robert Francis, Shoreline Community College
 Roger Frantz, San Diego State University
 Amanda S. Freeman, Kansas State University
 Marc Fusaro, East Carolina University
 Arthur Friedberg, Mohawk Valley Community College
 Julie Gallaway, Southwest Missouri State University
 Byron Gangnes, University of Hawaii
 Gay GareschÉ, Glendale Community College
 Neil Garston, California State University, Los Angeles
 Lisa Geib-Gunderson, University of Maryland
 Lisa M. George, City University of New York
 Linda Ghent, Eastern Illinois University
 Soma Ghosh, Bridgewater State College
 Kirk Gifford, Ricks College
 Scott Gilbert, Southern Illinois University
 Maria Giuli, Diablo Valley Community College
 Mark Gius, Quinnipiac College
 Gregory E. Givens, University of Alabama
 Randall Glover, Brevard Community College
 Stephan Gohmann, University of Louisville
 Richard Gosselin, Houston Community College
 John Graham, Rutgers University
 Patricia E. Graham, University of Northern Colorado
 Warren Graham, Tulsa Community College
 Homer Guevara, Jr., Northwest Vista College
 Osman Gulseven, North Carolina State University
 Jang-Ting Guo, University of California, Riverside
 Dennis Hammett, University of Texas at El Paso
 Leo Hardwick, Macomb Community College
 Mehdi Haririan, Bloomsburg University
 Paul Harris, Camden County Community College
 Mark Healy, William Rainey Harper College
 Rey Hernandez-Julian, Metropolitan State College of Denver
 Gus Herring, Brookhaven College
 Michael Heslop, Northern Virginia Community College
 Steven Hickerson, Mankato State University
 Frederick Steb Hipple, East Tennessee State University
 Lee Hoke, University of Tampa
 Andy Howard, Rio Hondo College
 Yu Hsing, Southeastern Louisiana University
 Greg Hunter, California State Polytechnic University, Pomona
 Matthew Hyle, Winona State University
 Todd Idson, Boston University
 Harvey James, University of Hartford
 Russell Janis, University of Massachusetts at Amherst
 Ricot Jean, Valencia College
 Jay A. Johnson, Southeastern Louisiana University
 Ted Joyce, City University of New York, Baruch College
 Ahmad A. Kader, University of Nevada, Las Vegas
 Jonathan D. Kaplan, California State University, Sacramento
 Arthur Kartman, San Diego State University
 Chris Kauffman, University of Tennessee
 Diane Keenan, Cerritos College
 Brian Kench, University of Tampa
 John Keith, Utah State University
 Kristen Keith, University of Toledo
 Joe Kerkvliet, Oregon State University
 Randall Kesselring, Arkansas State University
 Gary Kikuchi, University of Hawaii at Manoa
 Douglas Kinnear, Colorado State University
 Morris Knapp, Miami Dade Community College
 Steven Koch, Georgia Southern University
 Kate Krause, University of New Mexico
 Stephan Kroll, California State University, Sacramento
 Joyce Lapping, University of Southern Maine
 Tom Larson, California State University, Los Angeles
 Robert Lemke, Florida International University
 J. Mark Leonard, University of Nebraska at Omaha
 Tony Lima, California State University, Hayward
 Joshua Long, Ivy Tech Community College
 Kenneth Long, New River Community College
 Noel Lotz, Middle Tennessee State University
 Marty Ludlum, Oklahoma City Community College
 Brian Lynch, Lake Land College
 Michael Machiorlatti, Oklahoma City Community College
 Roger Mack, De Anza College
 Michael Magura, University of Toledo
 Mark Maier, Glendale College
 Svitlana Maksymenko, University of Pittsburgh
 Paula Manns, Atlantic Cape Community College
 Dan Marburger, Arkansas State University
 Kathryn Marshall, Ohio State University
 John V. Martin, Boise State University
 Drew E. Mattson, Anoka-Ramsey Community College
 Stephen McCafferty, Ohio State University
 Thomas S. McCaleb, Florida State University
 Katherine S. McCann, University of Delaware

- William McLean, Oklahoma State University
- Diego Mendez-Carbajo, Illinois Wesleyan University
- Evelina Mengova, California State University, Fullerton
- Thomas Meyer, Patrick Henry Community College
- Meghan Millea, Mississippi State University
- Michael Milligan, Front Range Community College
- Jenny Minier, University of Miami
- David Mitchell, Valdosta State University
- Dr. Carl B. Montano, Lamar University
- Christine Moser, Western Michigan University
- William Mosher, Clark University
- Mike Munoz, Northwest Vista College
- John R. Mundy, St. Johns River State College
- Kevin Murphy, Oakland University
- Ronald Nate, Brigham Young University, Idaho
- Nasrin Nazemzadeh, Rowan Cabarrus Community College
- Michael Nelson, Texas A&M University
- Rebecca Neumann, University of Wisconsin—Milwaukee
- Charles Newton, Houston Community College Southwest
- Melinda Nish, Salt Lake Community College
- Lee Nordgren, Indiana University at Bloomington
- Norman P. Obst, Michigan State University
- Inge O'Connor, Syracuse University
- William C. O'Connor, Western Montana College—University of Montana
- Fola Odebunmi, Cypress College
- Victor I. Oguledo, Florida A&M University
- Charles Okeke, College of Southern Nevada
- Lydia M. Ortega, St. Philip's College
- P. Marcelo Oviedo, Iowa State University
- Jennifer Pate, Ph.D., Loyola Marymount University
- Sanjay Paul, Elizabethtown College
- Ken Peterson, Furman University
- Tim Petry, North Dakota State University
- Charles Pflanz, Scottsdale Community College
- Jonathon Phillips, North Carolina State University
- Basharat Pitafi, Southern Illinois University
- Anthony Plunkett, Harrison College
- Paul Poast, Ohio State University
- Greg Pratt, Mesa Community College
- Fernando Quijano, Dickinson State University
- Andy Radler, Butte Community College
- Ratha Ramoo, Diablo Valley College
- Karen Reid, University of Wisconsin, Parkside
- Mary Rigdon, University of Texas, Austin
- Helen Roberts, University of Illinois at Chicago
- Greg Rose, Sacramento City College
- Barbara Ross, Kapi'olani Community College
- Elham Rouhani, Gwinnett Technical College
- Jeffrey Rous, University of North Texas
- June Roux, Salem Community College
- Udayan Roy, Long Island University
- Nancy C. Rumore, University of Louisiana—Lafayette
- Mark Rush, University of Florida
- Rolando Sanchez, Northwest Vista College
- Joseph Santos, South Dakota State University
- Roland Santos, Lakeland Community College
- Mark Scanlan, Stephen F. Austin State University
- Ted Scheinman, Mount Hood Community College
- Buffie Schmidt, Augusta State University
- Jerry Schwartz, Broward Community College
- Gautam Sethi, Bard College
- Margaret Anne Shannon, Georgia Southern University
- Mushtaq Sheikh, Union County College
- Michelle Sheran-Andrews, University of North Carolina at Greensboro
- Virginia Shingleton, Valparaiso University
- Steven S. Shwiff, Texas A & M University—Commerce
- Charles Sicotte, Rock Valley College
- Issoufou Soumaila, Texas Tech University
- Martin Spechler, Indiana University
- Leticia Starkov, Elgin Community College
- Stela Stefanova, University of Delaware
- John Stiver, University of Connecticut
- Richard W. Stratton, The University of Akron
- Abdulhamid Sukar, Cameron University
- Terry Sutton, Southeast Missouri State University
- Janet M. Thomas, Bentley College
- Donna Thompson, Brookdale Community College
- Deborah Thorsen, Palm Beach State College
- James Thorson, Southern Connecticut State University
- Marc Tomljanovich, Colgate University
- Cynthia Royal Tori, Valdosta State University
- Ngoc-Bich Tran, San Jacinto College South
- Nora Underwood, University of California, Davis
- Jogindar S. Uppal, State University of New York
- Va Nee L. Van Vleck, California State University, Fresno
- Victoria Vernon, Empire State College / SUNY
- Christian Weber, Seattle University
- Ethel Weeks, Nassau Community College
- Jack Wegman, Santa Rosa Junior College
- Jason White, Northwest Missouri State University
- Benjamin Widner, Colorado State University
- Barbara Wiens-Tuers, Pennsylvania State University, Altoona
- Katherine Wolfe, University of Pittsburgh
- Kristen Wolfe, St. Johns River State College

This page intentionally left blank



You're in school!
Did you make the right decision?

Getting Started

When you have completed your study of this chapter, you will be able to

- 1 Define economics and explain the kinds of questions that economists try to answer.
- 2 Explain the ideas that define the economic way of thinking.
- 3 Explain how economics is useful as a life skill.



CHAPTER CHECKLIST

[MyEconLab Big Picture Video](#)

MyEconLab Concept Video

1.1 DEFINITION AND QUESTIONS

Well, did you make the right decision? Is being in school the best use of your time? You'll soon know how an economist answers this question—for it is an economic question. It arises from the fact that you want more than you can get. You want to be in school. But you also want the time to enjoy your favorite sports and movies, to travel, and to hang out with friends—time that right now you don't have because you've got classes to attend and assignments due. Your time is scarce.

■ Scarcity

Our inability to satisfy all our wants is called **scarcity**. The ability of each of us to satisfy our wants is limited by the time we have, the incomes we earn, and the prices we pay for the things we buy. These limits mean that everyone has unsatisfied wants. The ability of all of us as a society to satisfy our wants is limited by the productive resources that exist. These resources include the gifts of nature, our labor and ingenuity, and the tools and equipment that we have made.

Everyone, poor and rich alike, faces scarcity. A student wants Taylor Swift's latest album and a paperback but has only \$10.00 in his pocket. He faces scarcity. Gwen Stefani wants to spend a week on the set of *The Voice* in L.A., but she also wants to devote time and energy to her successful clothing line. She faces scarcity. The U.S. government wants to increase spending on homeland security and cut taxes. It faces scarcity. An entire society wants improved healthcare, an Internet connection in every classroom, clean lakes and rivers, and so on. Society faces scarcity. Scarcity is everywhere: Even parrots face scarcity!

Faced with scarcity, we must make choices. We must choose among the available alternatives. The student must choose the download or the paperback. Gwen Stefani must choose shooting episodes of *The Voice* or designing her next clothing collection. The government must choose greater security or tax cuts. And society must choose among healthcare, computers, the environment, and so on.

■ Economics Defined

Economics is the social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with *scarcity*, all the things that influence those choices, and the arrangements that coordinate them.

The subject has two broad parts:

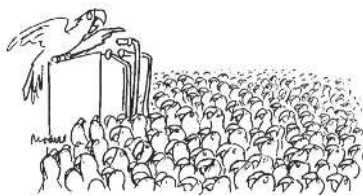
- Microeconomics, and
- Macroeconomics

Microeconomics

Microeconomics is the study of the choices that individuals and businesses make and the way these choices interact and are influenced by governments. Some examples of microeconomic questions are: Will you buy a 3-D TV or a standard one? Will Nintendo sell more units of Wii if it cuts the price? Will a cut in the income tax rate encourage people to work longer hours? Will a hike in the gas tax encourage more people to drive hybrid or smaller automobiles? Is music streaming killing song downloads?

Scarcity

The condition that arises because wants exceed the ability of resources to satisfy them.



Not only do I want a cracker—we all want a cracker!

© The New Yorker Collection 1985 Frank Modell from cartoonbank.com. All Rights Reserved.

Economics

The social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with *scarcity*, all the things that influence those choices, and the arrangements that coordinate them.

Microeconomics

The study of the choices that individuals and businesses make and the way these choices interact and are influenced by governments.

Macroeconomics

Macroeconomics is the study of the aggregate (or total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make. Some examples of macroeconomic questions are: Why did production and jobs expand slowly in the United States during 2014 and 2015? Why are incomes growing much faster in China and India than in the United States? Why is unemployment in Europe so high? Why are Americans borrowing more than \$1 billion a day from the rest of the world?

Two big questions define the scope of economics:

- How do choices end up determining *what*, *how*, and *for whom* goods and services get produced?
- When do choices made in the pursuit of *self-interest* also promote the *social interest*?

■ What, How, and For Whom?

Goods and services are the objects and actions that people value and produce to satisfy human wants. Goods are *objects* that satisfy wants. Sports shoes and ketchup are examples. Services are *actions* that satisfy wants. Haircuts and rock concerts are examples. We produce a dazzling array of goods and services that range from necessities such as food, houses, and healthcare to leisure items such as Blu-ray players and roller coaster rides.

What?

What determines the quantities of corn we grow, homes we build, and healthcare services we produce? Sixty years ago, farm output was 5 percent of total U.S. production. Today, it is 1 percent. Over the same period, the output of mines, construction, and utilities slipped from 9 percent to 7 percent of total production and manufacturing fell from 28 percent to 12 percent. These decreases in output are matched by increases in the production of a wide range of services, up from 58 percent of total production 60 years ago to 80 percent today. How will these quantities change in the future as ongoing changes in technology make an ever-wider array of goods and services available to us?

How?

How are goods and services produced? In a vineyard in France, a hundred basket-carrying workers pick the annual grape crop by hand. In a vineyard in California, a huge machine and a few workers do the same job. Look around and you will see many examples of this phenomenon—the same job being done in different ways. In some stores, checkout clerks key in prices. In others, they use a laser scanner. One farmer keeps track of his livestock feeding schedules and inventories by using paper-and-pencil records, while another uses a computer. In some plants, GM hires workers to weld auto bodies and in others it uses robots to do the job.

Why do we use machines in some cases and people in others? Do mechanization and technological change destroy more jobs than they create? Do they make us better off or worse off?

Macroeconomics

The study of the aggregate (or total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make.

Goods and services

The objects (goods) and the actions (services) that people value and produce to satisfy human wants.



In a California vineyard a machine and a few workers do the same job as a hundred grape pickers in France.



A doctor gets more of the goods and services produced than a nurse or a medical assistant gets.

For Whom?

For whom are goods and services produced? The answer depends on the incomes that people earn and the prices they pay for the goods and services they buy. At given prices, a person who has a high income is able to buy more goods and services than a person who has a low income. Doctors earn much higher incomes than do nurses and medical assistants, so doctors get more of the goods and services produced than nurses and medical assistants get.

You probably know about many other persistent differences in incomes. Men, on average, earn more than women. Whites, on average, earn more than minorities. College graduates, on average, earn more than high school graduates. Americans, on average, earn more than Europeans, who in turn earn more, on average, than Asians and Africans. But there are some significant exceptions. The people of Japan and Hong Kong now earn an average income similar to that of Americans. And there is a lot of income inequality throughout the world.

What determines the incomes we earn? Why do doctors earn larger incomes than nurses? Why do men earn more, on average, than women? Why do college graduates earn more, on average, than high school graduates? Why do Americans earn more, on average, than Africans?

Economics explains how the choices that individuals, businesses, and governments make and the interactions of those choices end up determining *what*, *how*, and *for whom* goods and services are produced. In answering these questions, we have a deeper agenda in mind. We're not interested in just knowing how many Blu-ray players are produced, how they are produced, and who gets to enjoy them. We ultimately want to know the answer to the second big economic question that we'll now explore.

■ Can the Pursuit of Self-Interest Be in the Social Interest?

Every day, you and 321 million other Americans, along with 7.2 billion people in the rest of the world, make economic choices that result in "*what*," "*how*," and "*for whom*" goods and services are produced.

Are the goods and services produced, and the quantities in which they are produced, the right ones? Are the scarce resources used in the best possible way? Do the goods and services we produce go to those who benefit most from them?

Self-Interest and the Social Interest

Choices that are the best for the individual who makes them are choices made in the pursuit of **self-interest**. Choices that are the best for society as a whole are said to be in the **social interest**. The social interest has two dimensions: *efficiency* and *equity*. We'll explore these concepts in later chapters. For now, think of efficiency as being achieved by baking the biggest possible pie, and think of equity as being achieved by sharing the pie in the fairest possible way.

You know that your own choices are the best ones for you—or at least you *think* they're the best at the time that you make them. You use your time and other resources in the way that you think is best. You might consider how your choices affect other people, but you order a home delivery pizza because you're hungry and want to eat, not because you're concerned that the delivery person or the cook needs an income. You make choices that are in your self-interest—choices that you think are best for you.

Self-interest

The choices that are best for the individual who makes them.

Social interest

The choices that are best for society as a whole.

When you act on your economic decisions, you come into contact with thousands of other people who produce and deliver the goods and services that you decide to buy or who buy the things that you sell. These people have made their own decisions—what to produce and how to produce it, whom to hire or whom to work for, and so on. Like you, all these people make choices that they think are best for them. When the pizza delivery person shows up at your home, he’s not doing you a favor. He’s earning his income and hoping for a good tip.

Can it be possible that when each one of us makes choices that are in our own best interest—in our self-interest—it turns out that these choices are also the best choices for society as a whole—in the social interest?

Adam Smith, regarded as the founder of economic science, (see *Eye on the Past* on p. 18) said the answer is *yes*. He believed that when we pursue our self-interest, we are led by an *invisible hand* to promote the social interest.

Is Adam Smith correct? Can it really be possible that the pursuit of self-interest promotes the social interest? Much of the rest of this book helps you to learn what economists know about this question and its answer. To help you start thinking about the question, we’re going to illustrate it with four topics that generate heated discussion in today’s world. You’re already at least a little bit familiar with each one of them. They are

- Globalization
- The information revolution
- Climate change
- Government budget deficit and debt

Globalization

Globalization—the expansion of international trade and the production of components and services by firms in other countries—has been going on for centuries. But in recent years, its pace has accelerated. Microchips, satellites, and fiber-optic cables have lowered the cost of communication and globalized production decisions. When Nike produces more sports shoes, people in Malaysia get more work. When Steven Spielberg makes a new movie, programmers in New Zealand write the code that makes magical animations. And when China Airlines wants a new airplane, Americans who work for Boeing build it.

Globalization is bringing rapid income growth, especially in Asia. But globalization is leaving some people behind. Jobs in manufacturing and routine services are shrinking in the United States, and some nations of Africa and South America are not sharing in the prosperity enjoyed in other parts of the world.

The owners of multinational firms benefit from lower production costs and consumers benefit from low-cost imported goods. But don’t displaced American workers lose? And doesn’t even the worker in Malaysia, who sews your new shoes for a few cents an hour, also lose? Is globalization in the social interest, or does globalization benefit just some at the expense of others?

The Information Revolution

We are living at a time of extraordinary economic change that has been called the *Information Revolution*. This name suggests a parallel with the *Industrial Revolution* of the 1800s and the *Agricultural Revolution* of 12,000 years ago.

The changes that have occurred during the last 35 years are based on one major technology: the microprocessor or computer chip. The spin-offs from faster



Workers in Asia make our shoes.



Robots fill orders at Amazon.

and cheaper computing have been widespread in telecommunications, music, and the automation of millions of tasks that previously required human decisions. You encounter some of these tasks when you check out at the grocery store or use an ATM. Less visible, but larger in scope, are the robots that assemble cars and move goods around warehouses. Over the next 20 years, more than one third of today's jobs will be done by a new generation of robots.

The computing and robot revolution resulted from people pursuing their self-interest. Gordon Moore, the chip maker who set up Intel, and Bill Gates, who quit Harvard to set up Microsoft, weren't thinking how much easier it would be for you to turn in your essay on time if you had a computer. Moore and Gates and thousands of other entrepreneurs were in pursuit of big rewards. Yet their actions made many other people better off. They advanced the social interest.

But are resources used in the best possible way? Or do Intel and Microsoft set their prices too high and put their products out of reach for too many people? And is it in the social interest for robots to take people's jobs?

Climate Change



Human activity is raising the Earth's surface temperature.

The Earth is getting hotter and the ice at the two poles is melting. Since the late nineteenth century, the Earth's surface temperature has increased about 1 degree Fahrenheit, and close to a half of that increase occurred over the past 25 years.

Most climate scientists believe that the current warming has come at least in part from human economic activity—from self-interested choices—and that, if left unchecked, the warming will bring large future economic costs.

Are the individual energy choices that each of us makes damaging the social interest? What needs to be done to make our choices serve the social interest? Would the United States joining with other nations to limit carbon emissions serve the social interest? What other measures might be introduced?

Government Budget Deficit and Debt



A government budget time bomb is ticking as spending grows faster than tax revenues.

Every year since 2000, the U.S. government has run a budget deficit. On average, the government has spent \$2.3 billion a day more than it has received in taxes. The government's debt has increased each day by that amount. Over the 15 year period from 2000 to 2015, government debt increased by \$12.5 trillion. Your personal share of this debt is \$56,000.

This large deficit and debt is just the beginning of an even bigger problem. From about 2020 onwards, the retirement and healthcare benefits to which older Americans are entitled are going to cost increasingly more than current taxes can cover. With no changes in tax or benefit rates, the budget deficit will increase and the debt will swell ever higher.

Deficits and the debts they create cannot persist indefinitely, and debts must somehow be repaid. They will most likely be repaid by you, not by your parents. When we make our voter choices, we pursue our self-interest. Do our choices serve the social interest? Do the choices made by politicians and bureaucrats in Washington and the state capitals promote the social interest, or do they only serve their own self-interests?

The four issues we've just reviewed raise questions that are hard to answer. We'll return to each of them at various points throughout this text and explain when the social interest is served and when there remain problems to be solved.

CHECKPOINT 1.1

Define economics and explain the kinds of questions that economists try to answer.

[MyEconLab Study Plan 1.1](#)
[Key Terms Quiz](#)
[Solutions Video](#)

Practice Problems

1. Economics studies choices that arise from one fact. What is that fact?
2. Provide three examples of wants in the United States today that are especially pressing but not satisfied.
3. In the following three news items, find examples of the *what*, *how*, and *for whom* questions: “With more research, we will cure cancer”; “A good education is the right of every child”; “Congress raises taxes to curb the deficit.”
4. How does a new Starbucks in Beijing, China, influence self-interest and the social interest?
5. How does Facebook influence self-interest and the social interest?

In the News

1. The Bureau of Labor Statistics (BLS) reports that high-paying jobs in health-care and jobs in leisure, hospitality, and education will expand quickly over the next five years. How does the BLS expect *what* and *for whom* goods and services are produced to change in the next five years?
2. Hewlett-Packard will cut 30,000 jobs and lower its cost by \$2.7 billion a year.
Source: *Fortune*, October 1, 2015

Explain how Hewlett-Packard’s decision made in its self-interest might also be in the social interest.

Solutions to Practice Problems

1. The fact is scarcity—human wants exceed the resources available.
2. Examples would include security from terrorism, cleaner air in our cities, better public schools, and better public infrastructure. (Think of others.)
3. More research is a *how* question, and a cure for cancer is a *what* question. Good education is a *what* question, and every child is a *for whom* question. Raising taxes is a *for whom* question.
4. Decisions made by Starbucks are in Starbucks’ self-interest but they also serve the self-interest of its customers and so contribute to the social interest.
5. Facebook serves the self-interest of its investors, users, and advertisers. It also serves the social interest by enabling people to share information.

Solutions to In the News

1. The BLS expects the quantities of goods and services produced by workers in health-care, leisure, hospitality, and education to increase. For whom they are produced depends on how people’s incomes and the prices of goods and services will change in the next five years. The BLS expects workers in these high-paying jobs and expanding industries will get more of them.
2. Hewlett-Packard’s product prices might fall and benefit its customers. The laid-off workers will find new jobs, some of which might pay higher wages.

MyEconLab Concept Video

1.2 THE ECONOMIC WAY OF THINKING

The definition of economics and the kinds of questions that economists try to answer give you a flavor of the scope of economics. But they don't tell you how economists *think* about these questions and how they go about seeking answers to them. You're now going to see how economists approach their work.

We'll break this task into two parts. First, we'll explain the ideas that economists use to frame their view of the world. These ideas will soon have you thinking like an economist. Second, we'll look at economics both as a social science and as a policy tool that governments, businesses, and *you* can use.

Six ideas define the *economic way of thinking*:

- A choice is a *tradeoff*
- *Cost* is what you *must give up* to get something.
- *Benefit* is what you gain from something.
- People make *rational choices* by comparing benefits and costs.
- Most choices are "*how much*" choices made at the *margin*.
- Choices respond to *incentives*.

■ A Choice Is a Tradeoff

A **tradeoff** is an exchange—giving up one thing to get something else. Because we face scarcity, we must make choices. And when we make a choice, we select from the available alternatives. You can think about choices as tradeoffs. When you choose one thing, you give up something else that you could have chosen.

Think about what you will do on Saturday night. You can spend the night studying for your next economics test or having fun with your friends, but you can't do both of these activities at the same time. You must choose how much time to devote to each. Whatever choice you make, you could have chosen something else. When you choose how to spend your Saturday night, you face a tradeoff between studying and hanging out with your friends. To get more study time, you must give up some time with your friends.

■ Cost: What You Must Give Up

The **opportunity cost** of something is the best thing you must give up to get it. You most likely think about the cost of something as the money you must spend to get it. But dig a bit deeper. If you spend \$10 on a movie ticket, you can't spend it on a sandwich. The movie ticket really costs a sandwich. The *cost* of something is what must be given up to get it, not the money spent on it. Economists use the term *opportunity cost* to emphasize this view of cost.

The biggest opportunity cost you face is that of being in school. This opportunity cost has two components: things you can't afford to buy and things you can't do with your time.

Start with the things you can't afford to buy. You've spent all your income on tuition, residence fees, books, and a laptop. If you weren't in school, you would have spent this money on tickets to ball games and movies and all the other things that you enjoy. But that's only the start of the things you can't afford to buy because you're in school. You've also given up the opportunity to get a job and buy the things that you could afford with your higher income. Suppose that the

Tradeoff

An exchange—giving up one thing to get something else.

Opportunity cost

The opportunity cost of something is the best thing you must give up to get it.



The opportunity cost of being in school: things you can't buy and do.

best job you could get if you weren't in school is working as a convenience store manager earning \$24,000 a year. Another part of your opportunity cost of being in school is all the things that you would buy with that extra \$24,000.

Now think about the time that being a student eats up. You spend many hours each week in class, doing homework assignments, preparing for tests, and so on. To do all these school activities, you must give up what would otherwise be time spent playing your favorite sport, time watching movies, and leisure time spent with your friends.

The opportunity cost of being in school is the best alternative things that you can't afford and that you don't have the time to enjoy. You might put a dollar value on this cost but the cost is the goods and services and time that you give up, not dollars.

■ Benefit: What You Gain

The **benefit** from something is the gain or pleasure that it brings, measured by what you are *willing to give up* to get it. Benefit is determined by personal *preferences*—by what a person likes and dislikes and the intensity of those feelings. If you get a huge kick out of Madden NFL, that video game brings you a large benefit. And if you have little interest in listening to Yo Yo Ma playing a Vivaldi cello concerto, that activity brings you a small benefit.

Some benefits are large and easy to identify, such as the benefit that you get from being in school. A big piece of that benefit is the goods and services that you will be able to enjoy with the boost to your earning power when you graduate. Some benefits are small, such as the benefit you receive from a slice of pizza.

Economists measure benefit as the most that a person is *willing to give up* to get something. You are willing to give up a lot for something that brings a large benefit. For example, because being in school brings a large benefit, you're *willing to give up* a lot of time and goods and services to get that benefit. But you're willing to give up very little for something that brings a small benefit. For example, you might be willing to give up one iTunes download to get a slice of pizza.

■ Rational Choice

A basic idea of economics is that in making choices, people act rationally. A **rational choice** is one that uses the available resources to best achieve the objective of the person making the choice.

But how do people choose rationally? The answer is by comparing the *benefits* and *costs* of the alternative choices and choosing the alternative that makes *net benefit*—benefit minus cost—as large as possible.

You have chosen to be a student. If that choice is rational, as economists assume, your benefit from being in school exceeds the cost, so your net benefit is maximized by being in school. For an outstanding baseball player, a high earning potential makes the opportunity cost of school higher than the benefit from school, so for that person, net benefit is maximized by choosing full-time sport. (*Eye on the Benefit and Cost of School* on p. 12 explores these examples more closely.)

The benefit from a choice is determined by the preferences of the person making the choice, so two people can make different rational choices even if they face the same cost. For example, you might like chocolate ice cream more than vanilla ice cream, but your friend prefers vanilla. So it is rational for you to choose chocolate and for your friend to choose vanilla.



The opportunity cost of being in school includes forgone earnings.

Benefit

The benefit from something is the gain or pleasure that it brings, measured by what you are *willing to give up* to get it.

Rational choice

A choice that uses the available resources to best achieve the objective of the person making the choice.