

Economics in the News

- 2 Production Possibilities in the Rust Belt p. 50
- 3 Demand and Supply: The Market for Orange Juice p. 78
- 4 The Elasticity of Demand for Sugar-Sweetened Drinks p. 102
- 5 Making Traffic Flow Efficiently p. 124
- 6 Push to Raise the Minimum Wage p. 148
- 7 The Cost of a Tariff p. 172
- 8 Consumer Choice with Unlimited Data p. 198
- 9 A Student's Biggest Choice p. 218
- 10 The Expanding Mobile Advertising Market p. 244
- 11 A Long-Run Decision for IKEA p. 268
- 12 Perfect Competition in Smartphone Apps p. 294
- 13 Is Google Misusing Monopoly Power? p. 320
- 14 Product Differentiation in Smartphones p. 338
- 15 A Price War in Cellphone Service p. 364
- 16 Maintaining the Transportation Infrastructure p. 388
- 17 Cutting Carbon Emissions p. 414
- 18 The Gig and Sharing Economy p. 440
- 19 The Increase in Inequality p. 466
- 20 Grades as Signals p. 486
- 21 Has Real GDP Growth Really Slowed Down? p. 508
- 22 Job Growth at Full Employment p. 534
- 23 North American Economic Growth p. 564
- 24 Interest Rates Low but Fall p. 586
- 25 Money and the Interest Rate p. 614
- 26 America's Trade Balance p. 644
- 27 Aggregate Supply and Aggregate Demand in Action p. 670
- 28 Expenditure Changes in the 2017 Expansion p. 696
- 29 The Stagnating Eurozone p. 724
- 30 Cutting the Corporate Tax Rate p. 752
- 31 The Fed Removed Stimulus p. 778



MACROECONOMICS

Prepare, Apply, Assess and Develop Employability Skills with MyLab Economics

83% 

of students said it helped them earn higher grades on homework, exams, or the course

MyLab™ Economics is an online homework, tutorial, and assessment program constructed to work with this text to engage students and improve results. It was designed to help students develop and assess the skills and applicable knowledge that they will need to succeed in their courses and their future careers.

See what students had to say about MyLab Economics:


“Usually when I do homework myself and don’t get it I am stuck, but [MyLab Economics] provided the tools necessary to help me learn how to work my way through the trickiest problems.”

— Zainul Lughmani,
Binghamton University

*Source: 2016 Student Survey, n 10,263

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.

Question 2.1: Calculate Nominal GDP for 2014 (Closed Economy) 

Suppose there are only three goods in this closed economy that does not trade with other countries: energy drinks (Consumption), computers (Investment), and public highways (Government). Over a two-year period, the amount spent on these items have changed. Based on information in the table below, determine nominal and real GDP for this simple economy.

C + I + G = 2014 Nominal GDP

+ + = \$


[Check Answer](#)

Economy Final Goods and Services

Category	2014	2015
Consumption	\$2.50	\$3.50
Investment	\$1.50	\$2.00
Government	\$2.00	\$2.50

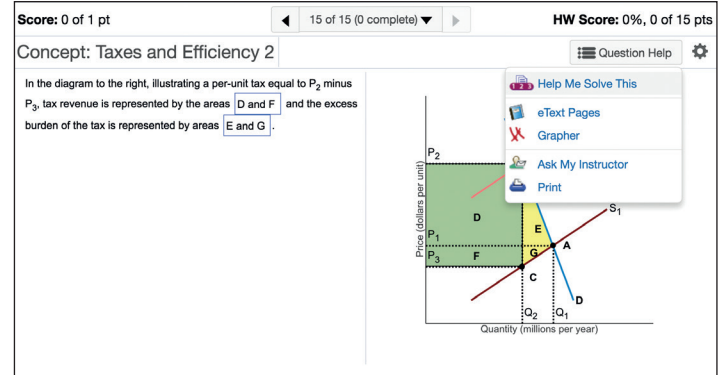
Nominal GDP 2014: -

Nominal GDP 2015: -



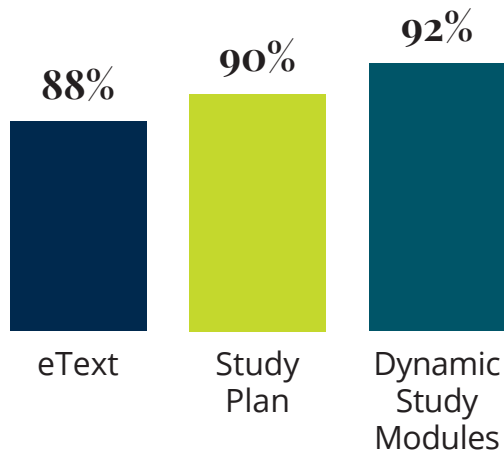

Question Help

MyLab Economics homework and practice questions are correlated to the textbook, and many generate algorithmically to give students unlimited opportunity for mastery of concepts. If students get stuck, Learning Aids including Help Me Solve This and eText Pages walk them through the problem and identify helpful information in the text, giving them assistance when they need it most.



"[MyLab Economics] provides ample practice and explanation of the concepts at hand."

— Heather Burkett, University of Nebraska at Omaha



Dynamic Study Modules help students study chapter topics effectively on their own by continuously assessing their **knowledge application** and performance in real time. These are available as prebuilt Prepare assignments, and are accessible on smartphones, tablets, and computers.

Pearson eText enhances student learning—both in and outside the classroom. Worked examples, videos, and interactive tutorials bring learning to life, while algorithmic practice and self-assessment opportunities test students' understanding of the material. Accessible anytime, anywhere via MyLab or the app.

% of students who found learning tool helpful

The **MyLab Gradebook** offers an easy way for students and instructors to view course performance. Item Analysis allows instructors to quickly see trends by analyzing details like the number of students who answered correctly/incorrectly, time on task, and median time spend on a question by question basis. And because it's correlated with the AACSB Standards, instructors can track students' progress toward outcomes that the organization has deemed important in preparing students to be **leaders**.



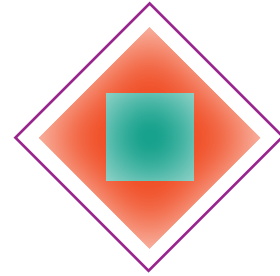
87% of students would tell their instructor to keep using MyLab Economics

For additional details visit: www.pearson.com/mylab/economics



MACROECONOMICS

THIRTEENTH EDITION



MICHAEL PARKIN

University of Western Ontario



New York, NY

Vice President, Business, Economics, and UK Courseware:

Donna Battista

Director of Portfolio Management: Adrienne D'Ambrosio

Portfolio Manager: Ashley Bryan

Editorial Assistant: Nicole Nedwidek

Vice President, Product Marketing: Roxanne McCarley

Senior Product Marketer: Tricia Murphy

Product Marketing Assistant: Marianela Silvestri

Manager of Field Marketing, Business Publishing:

Adam Goldstein

Senior Field Marketing Manager: Carlie Marvel

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 Freihofer

Operations Specialist: Carol Melville

Design Lead: Kathryn Foot

Manager, Learning Tools: Brian Surette

Content Developer, Learning Tools: Sarah Peterson

Managing Producer, Digital Studio and GLP, Media

Production and Development: Ashley Santora

Managing Producer, Digital Studio: Diane Lombardo

Digital Studio Producer: Melissa Honig

Digital Studio Producer: Alana Coles

Digital Content Team Lead: Noel Lotz

Digital Content Project Lead: Noel Lotz

Project Manager: Heather Johnson, Integra Software Services

Interior Design: Emily Friel, Integra Software Services

Cover Design: Emily Friel, Integra Software Services

Cover Art: Leonori; Kukuruxa/Shutterstock

Printer/Binder: LSC Communications, Inc./Kendallville

Cover Printer: Phoenix Color/Hagerstown

Copyright © 2018, 2016, 2014 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 page C1, which constitutes an extension of this copyright page.

PEARSON, ALWAYS LEARNING, and MYLAB 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

Cataloging-in-Publication Data is available on file at the Library of Congress.



ISBN 10: 0-13-474445-4
ISBN 13: 978-0-13-474445-2

TO ROBIN



ABOUT THE AUTHOR

Michael Parkin is Professor Emeritus in the Department of Economics at the University of Western Ontario, Canada. Professor Parkin has held faculty appointments at Brown University, the University of Manchester, the University of Essex, and Bond University. 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* and as managing editor of the *Canadian Journal of Economics*. Professor Parkin's research on macroeconomics, monetary economics, and international economics has resulted in over 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 became most visible to the public with his work on inflation that discredited the use of wage and price controls. Michael Parkin also spearheaded the movement toward European monetary union. Professor Parkin is an experienced and dedicated teacher of introductory economics.





BRIEF CONTENTS

PART ONE

INTRODUCTION 1

- CHAPTER 1 What is Economics? 1
- CHAPTER 2 The Economic Problem 33
- CHAPTER 3 Demand and Supply 57

PART TWO

MONITORING MACROECONOMIC PERFORMANCE 87

- CHAPTER 4 Monitoring the Value of Production: GDP 87
- CHAPTER 5 Monitoring Jobs and Inflation 111

PART THREE

MACROECONOMIC TRENDS 135

- CHAPTER 6 Economic Growth 135
- CHAPTER 7 Finance, Saving, and Investment 163

- CHAPTER 8 Money, the Price Level, and Inflation 185

- CHAPTER 9 The Exchange Rate and the Balance of Payments 215

PART FOUR

MACROECONOMIC FLUCTUATIONS 245

- CHAPTER 10 Aggregate Supply and Aggregate Demand 245

- CHAPTER 11 Expenditure Multipliers 269

- CHAPTER 12 The Business Cycle, Inflation, and Deflation 299

PART FIVE

MACROECONOMIC POLICY 325

- CHAPTER 13 Fiscal Policy 325

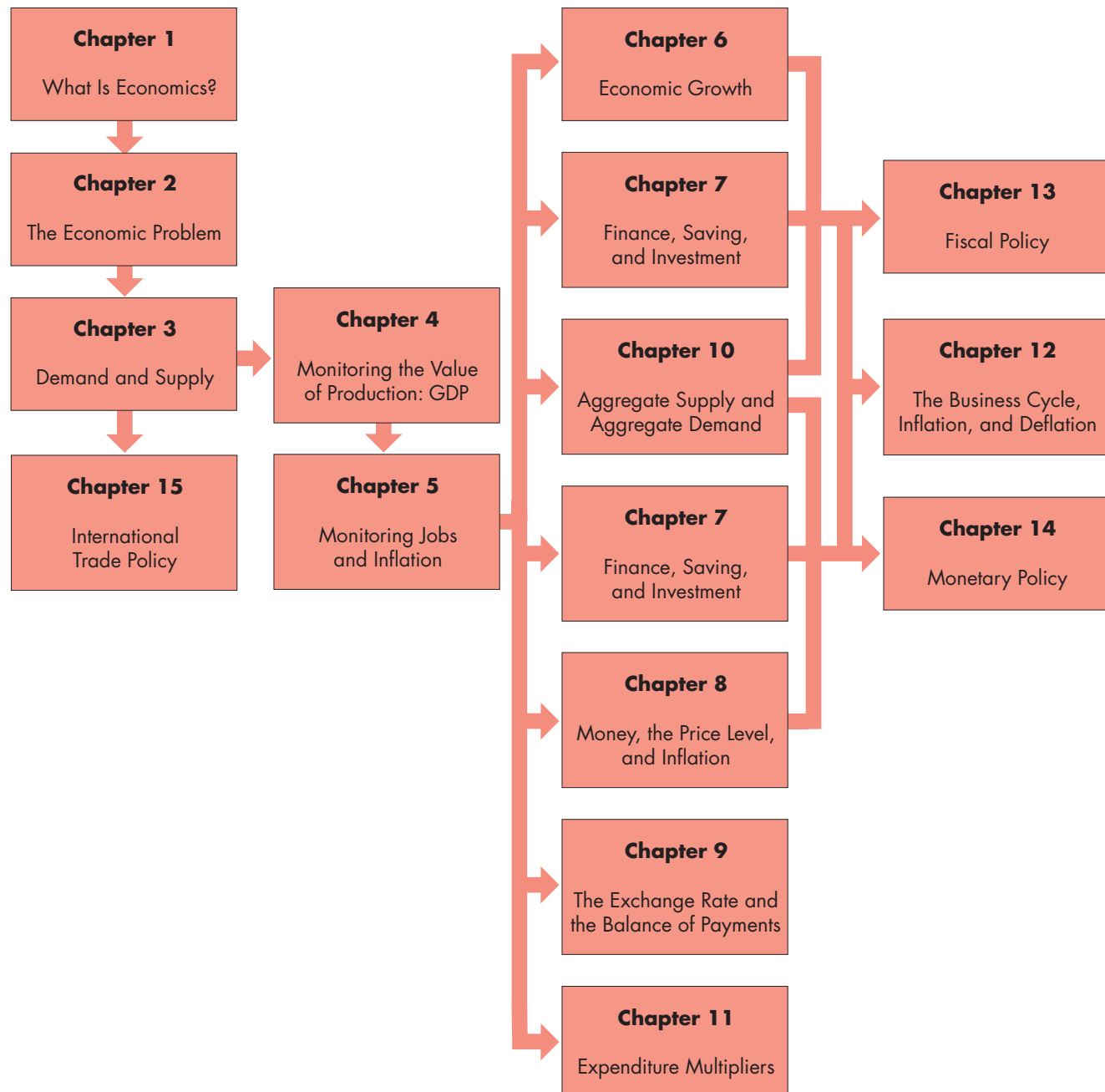
- CHAPTER 14 Monetary Policy 351

- CHAPTER 15 International Trade Policy 377



ALTERNATIVE PATHWAYS THROUGH THE CHAPTERS

Flexibility



Start here ...

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

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

DETAILED CONTENTS

PART ONE INTRODUCTION 1

CHAPTER 1 ♦ WHAT IS ECONOMICS? 1

Definition of Economics 2

Two Big Economic Questions 3

What, How, and For Whom? 3

Do Choices Made in the Pursuit of Self-Interest
also Promote the Social Interest? 5

The Economic Way of Thinking 9

A Choice Is a Tradeoff 9

Making a Rational Choice 9

Benefit: What You Gain 9

Cost: What You *Must* Give Up 9

How Much? Choosing at the Margin 10

Choices Respond to Incentives 10

Economics as Social Science and Policy Tool 11

Economist as Social Scientist 11

Economist as Policy Adviser 11

Economists in the Economy 12

Jobs for an Economics Major 12

Will Jobs for Economics Majors Grow? 12

Earnings of Economics Majors 13

Skills Needed for Economics Jobs 13

*Summary (Key Points and Key Terms), Study Plan Problems
and Applications, and Additional Problems and Applications
appear at the end of each chapter.*

APPENDIX Graphs in Economics 17

Graphing Data 17

Graphing Economic Data 18

Scatter Diagrams 18

Graphs Used in Economic Models 20

Variables That Move in the Same Direction 20

Variables That Move in Opposite Directions 21

Variables That Have a Maximum or a
Minimum 22

Variables That Are Unrelated 23

The Slope of a Relationship 24

The Slope of a Straight Line 24

The Slope of a Curved Line 25

Graphing Relationships Among More Than Two
Variables 26

Ceteris Paribus 26

When Other Things Change 27

MATHEMATICAL NOTE

Equations of Straight Lines 28

■ AT ISSUE, 8

■ ECONOMICS IN THE NEWS, 6, 14

CHAPTER 2 ♦ THE ECONOMIC PROBLEM 33

Production Possibilities and Opportunity Cost 34

- Production Possibilities Frontier 34
- Production Efficiency 35
- Tradeoff Along the *PPF* 35
- Opportunity Cost 35

Using Resources Efficiently 37

- The *PPF* and Marginal Cost 37
- Preferences and Marginal Benefit 38
- Allocative Efficiency 39

Gains from Trade 40

- Comparative Advantage and Absolute Advantage 40
- Achieving the Gains from Trade 42
- The Liz–Joe Economy and its *PPF* 44

Economic Growth 45

- The Cost of Economic Growth 45
- A Nation’s Economic Growth 46
- Changes in What We Produce 46

Economic Coordination 48

- Firms 48
- Markets 48
- Property Rights 48
- Money 48
- Circular Flows Through Markets 48
- Coordinating Decisions 49

■ ECONOMICS IN ACTION, 46

■ ECONOMICS IN THE NEWS, 36, 50

CHAPTER 3 ♦ DEMAND AND SUPPLY 57

Markets and Prices 58

Demand 59

- The Law of Demand 59
- Demand Curve and Demand Schedule 59
- A Change in Demand 60
- A Change in the Quantity Demanded Versus a Change in Demand 62

Supply 64

- The Law of Supply 64
- Supply Curve and Supply Schedule 64
- A Change in Supply 65
- A Change in the Quantity Supplied Versus a Change in Supply 66

Market Equilibrium 68

- Price as a Regulator 68
- Price Adjustments 69

Predicting Changes in Price and Quantity 70

- An Increase in Demand 70
- A Decrease in Demand 70
- An Increase in Supply 72
- A Decrease in Supply 72
- Changes in Both Demand and Supply 74

MATHEMATICAL NOTE

Demand, Supply, and Equilibrium 78

■ ECONOMICS IN THE NEWS, 71, 73, 76

PART ONE WRAP-UP ♦

Understanding the Scope of Economics

Your Economic Revolution 85

Talking with

Esther Duflo 86

PART TWO
MONITORING MACROECONOMIC
PERFORMANCE 87

CHAPTER 4 ♦ MONITORING THE VALUE OF PRODUCTION: GDP 87

- Gross Domestic Product 88
 - GDP Defined 88
 - GDP and the Circular Flow of Expenditure and Income 88
 - Why “Domestic” and Why “Gross”? 90
- Measuring U.S. GDP 91
 - The Expenditure Approach 91
 - The Income Approach 92
 - Nominal GDP and Real GDP 93
 - Calculating Real GDP 93
- The Uses and Limitations of Real GDP 94
 - The Standard of Living Over Time 94
 - The Standard of Living Across Countries 96
 - Limitations of Real GDP 97

APPENDIX Graphs in Macroeconomics 102

- The Time-Series Graph 102
 - Making a Time-Series Graph 102
 - Reading a Time-Series Graph 102
 - Ratio Scale Reveals Trend 103
 - A Time-Series With a Trend 103
 - Using a Ratio Scale 103

MATHEMATICAL NOTE

Chained-Dollar Real GDP 104

- ECONOMICS IN ACTION, 99
- AT ISSUE, 98
- ECONOMICS IN THE NEWS, 100

CHAPTER 5 ♦ MONITORING JOBS AND INFLATION 111

- Employment and Unemployment 112
 - Why Unemployment Is a Problem 112
 - Current Population Survey 113
 - Three Labor Market Indicators 113
 - Other Definitions of Unemployment 115
 - Most Costly Unemployment 116
 - Alternative Measures of Unemployment 116
- Unemployment and Full Employment 117
 - Frictional Unemployment 117
 - Structural Unemployment 117
 - Cyclical Unemployment 117
 - “Natural” Unemployment 117
 - Real GDP and Unemployment Over the Cycle 118
- The Price Level, Inflation, and Deflation 120
 - Why Inflation and Deflation Are Problems 120
 - The Consumer Price Index 121
 - Reading the CPI Numbers 121
 - Constructing the CPI 121
 - Measuring the Inflation Rate 122
 - Distinguishing High Inflation from a High Price Level 123
 - The Biased CPI 123
 - Consequences and Magnitude of Bias 124
 - Alternative Price Indexes 124
 - Core and Sticky-Price Inflation 124
 - The Real Variables in Macroeconomics 125

■ ECONOMICS IN ACTION, 112, 118

■ ECONOMICS IN THE NEWS, 126

PART TWO WRAP-UP ♦

Monitoring Macroeconomic Performance

The Big Picture 133

Talking with

Richard Clarida 134

PART THREE
MACROECONOMIC TRENDS 135

CHAPTER 6 ♦ ECONOMIC GROWTH 135

- The Basics of Economic Growth 136
 - Calculating Growth Rates 136
 - Economic Growth Versus Business Cycle
 - Expansion 136
 - The Magic of Sustained Growth 137
 - Applying the Rule of 70 138
- Long-Term Growth Trends 139
 - Long-Term Growth in the U.S. Economy 139
 - Real GDP Growth in the World Economy 140
- How Potential GDP Grows 142
 - What Determines Potential GDP? 142
 - What Makes Potential GDP Grow? 144
- Why Labor Productivity Grows 147
 - Preconditions for Labor Productivity
 - Growth 147
 - Physical Capital Growth 147
 - Human Capital Growth 148
 - Technological Advances 148
- Is Economic Growth Sustainable? Theories, Evidence, and Policies 151
 - Classical Growth Theory 151
 - Neoclassical Growth Theory 151
 - New Growth Theory 152
 - New Growth Theory Versus Malthusian Theory 154
 - Sorting Out the Theories 154
 - The Empirical Evidence on the Causes of Economic Growth 154
 - Policies for Achieving Faster Growth 154
- ECONOMICS IN ACTION, 141, 148, 149
- ECONOMICS IN THE NEWS, 150, 156

CHAPTER 7 ♦ FINANCE, SAVING, AND INVESTMENT 163

- Financial Markets and Financial Institutions 164
 - Finance and Money 164
 - Capital and Financial Capital 164
 - Capital and Investment 164
 - Wealth and Saving 164
 - Financial Capital Markets 165
 - Financial Institutions 166
 - Funds that Finance Investment 167
- Financial Decisions and Risks 169
 - The Time Value of Money 169
 - Net Present Value 169
 - The Decision Rule 169
 - Financial Risk: Insolvency and Illiquidity 169
 - Market Risk: Interest Rates and Asset Prices 170
 - Getting Real 170
- The Loanable Funds Market 171
 - The Demand for Loanable Funds 171
 - The Supply of Loanable Funds 171
 - Equilibrium in the Loanable Funds Market 172
 - Changes in Demand and Supply 173
- Government in the Loanable Funds Market 176
 - A Government Budget Surplus 176
 - A Government Budget Deficit 176
- ECONOMICS IN ACTION, 168, 173, 174
- ECONOMICS IN THE NEWS, 178

CHAPTER 8 ◆ MONEY, THE PRICE LEVEL, AND INFLATION 185

What Is Money? 186
 Medium of Exchange 186
 Unit of Account 186
 Store of Value 187
 Money in the United States Today 187

Depository Institutions 189
 Types of Depository Institutions 189
 What Depository Institutions Do 189
 Economic Benefits Provided by Depository Institutions 190
 How Depository Institutions Are Regulated 190
 Financial Innovation 192

The Federal Reserve System 193
 The Structure of the Fed 193
 The Fed's Balance Sheet 194
 The Fed's Policy Tools 194

How Banks Create Money 196
 Creating Deposits by Making Loans 196
 The Money Creation Process 197
 The Money Multiplier 198

The Money Market 200
 The Influences on Money Holding 200
 The Demand for Money 201
 Shifts in the Demand for Money Curve 201
 Money Market Equilibrium 202

The Quantity Theory of Money 204

MATHEMATICAL NOTE

The Money Multiplier 208

- ECONOMICS IN ACTION, 187, 192, 195, 198, 204
- AT ISSUE, 191
- ECONOMICS IN THE NEWS, 199, 206

CHAPTER 9 ◆ THE EXCHANGE RATE AND THE BALANCE OF PAYMENTS 215

The Foreign Exchange Market 216
 Trading Currencies 216
 Exchange Rates 216
 Questions About the U.S. Dollar Exchange Rate 216
 An Exchange Rate Is a Price 216
 The Demand for One Money Is the Supply of Another Money 217
 Demand in the Foreign Exchange Market 217
 Demand Curve for U.S. Dollars 218
 Supply in the Foreign Exchange Market 219
 Supply Curve for U.S. Dollars 219
 Market Equilibrium 220
 Changes in the Demand for U.S. Dollars 220
 Changes in the Supply of U.S. Dollars 221
 Changes in the Exchange Rate 222

Arbitrage, Speculation, and Market Fundamentals 224
 Arbitrage 224
 Speculation 225
 Market Fundamentals 226

Exchange Rate Policy 227
 Flexible Exchange Rate 227
 Fixed Exchange Rate 227
 Crawling Peg 228

Financing International Trade 230
 Balance of Payments Accounts 230
 Borrowers and Lenders 232
 The Global Loanable Funds Market 232
 Debtors and Creditors 233
 Is U.S. Borrowing for Consumption? 233
 Current Account Balance 234
 Net Exports 234
 Where Is the Exchange Rate? 235

- ECONOMICS IN ACTION, 217, 223, 225, 228, 231, 235
- ECONOMICS IN THE NEWS, 236

PART THREE WRAP-UP ◆

Understanding Macroeconomic Trends

Expanding the Frontier 243

Talking with

Xavier Sala-i-Martin 244

**PART FOUR
MACROECONOMIC FLUCTUATIONS 245**

**CHAPTER 10 ◆ AGGREGATE SUPPLY AND
AGGREGATE DEMAND 245**

- Aggregate Supply 246
 - Quantity Supplied and Supply 246
 - Long-Run Aggregate Supply 246
 - Short-Run Aggregate Supply 247
 - Changes in Aggregate Supply 248
- Aggregate Demand 250
 - The Aggregate Demand Curve 250
 - Changes in Aggregate Demand 251
- Explaining Macroeconomic Trends and
Fluctuations 254
 - Short-Run Macroeconomic Equilibrium 254
 - Long-Run Macroeconomic Equilibrium 254
 - Economic Growth and Inflation in the *AS-AD*
Model 255
 - The Business Cycle in the *AS-AD* Model 256
 - Fluctuations in Aggregate Demand 258
 - Fluctuations in Aggregate Supply 259
- Macroeconomic Schools of Thought 260
 - The Classical View 260
 - The Keynesian View 260
 - The Monetarist View 261
 - The Way Ahead 261
- ECONOMICS IN ACTION, 252, 255, 256
- ECONOMICS IN THE NEWS, 262

**CHAPTER 11 ◆ EXPENDITURE
MULTIPLIERS 269**

- Fixed Prices and Expenditure Plans 270
 - Expenditure Plans 270
 - Consumption and Saving Plans 270
 - Marginal Propensities to Consume and Save 272
 - Slopes and Marginal Propensities 272
 - Consumption as a Function of Real GDP 273
 - Import Function 273
- Real GDP with a Fixed Price Level 274
 - Aggregate Planned Expenditure 274
 - Actual Expenditure, Planned Expenditure, and
Real GDP 275
 - Equilibrium Expenditure 276
 - Convergence to Equilibrium 277
- The Multiplier 278
 - The Basic Idea of the Multiplier 278
 - The Multiplier Effect 278
 - Why Is the Multiplier Greater Than 1? 279
 - The Size of the Multiplier 279
 - The Multiplier and the Slope of the *AE*
Curve 280
 - Imports and Income Taxes 281
 - The Multiplier Process 281
 - Business Cycle Turning Points 282
- The Multiplier and the Price Level 283
 - Adjusting Quantities and Prices 283
 - Aggregate Expenditure and Aggregate
Demand 283
 - Deriving the Aggregate Demand Curve 283
 - Changes in Aggregate Expenditure and Aggregate
Demand 284
 - Equilibrium Real GDP and the Price Level 285
- MATHEMATICAL NOTE**
- The Algebra of the Keynesian Model 290**
- ECONOMICS IN ACTION, 273, 282
- ECONOMICS IN THE NEWS, 288

CHAPTER 12 ♦ **THE BUSINESS CYCLE, INFLATION, AND DEFLATION** 299

- The Business Cycle 300
 - Mainstream Business Cycle Theory 300
 - Real Business Cycle Theory 301
- Inflation Cycles 305
 - Demand-Pull Inflation 305
 - Cost-Push Inflation 307
 - Expected Inflation 309
 - Forecasting Inflation 310
 - Inflation and the Business Cycle 310
- Deflation 311
 - What Causes Deflation? 311
 - What Are the Consequences of Deflation? 313
 - How Can Deflation be Ended? 313
- The Phillips Curve 314
 - The Short-Run Phillips Curve 314
 - The Long-Run Phillips Curve 314

■ ECONOMICS IN ACTION, 302, 312, 315

■ ECONOMICS IN THE NEWS, 316

PART FOUR WRAP-UP ♦

Understanding Macroeconomic Fluctuations

Boom and Bust 323

Talking with

Ricardo J. Caballero 324

PART FIVE
MACROECONOMIC POLICY 325

CHAPTER 13 ♦ **FISCAL POLICY** 325

- The Federal Budget 326
 - The Institutions and Laws 326
 - Highlights of the 2018 Budget 327
 - The Budget in Historical Perspective 328
 - Budget Balance and Debt 330
 - State and Local Budgets 331
- Supply-Side Effects of Fiscal Policy 332
 - Full Employment and Potential GDP 332
 - The Effects of the Income Tax 332
 - Taxes on Expenditure and the Tax Wedge 333
 - Taxes and the Incentive to Save and Invest 334
 - Tax Revenues and the Laffer Curve 335
 - The Supply-Side Debate 335
- Generational Effects of Fiscal Policy 336
 - Generational Accounting and Present Value 336
 - The Social Security Time Bomb 336
 - Generational Imbalance 337
 - International Debt 337
- Fiscal Stimulus 338
 - Automatic Fiscal Policy and Cyclical and Structural Budget Balances 338
 - Discretionary Fiscal Stimulus 341
- ECONOMICS IN ACTION, 331, 333, 340, 342
- ECONOMICS IN THE NEWS, 344

CHAPTER 14 ♦ MONETARY POLICY 351

Monetary Policy Objectives and Framework 352
 Monetary Policy Objectives 352
 Operational “Stable Prices” Goal 353
 Operational “Maximum Employment” Goal 353
 Responsibility for Monetary Policy 354

The Conduct of Monetary Policy 354
 The Monetary Policy Instrument 354
 The Federal Funds Rate Decision 354
 Implementing the Policy Decision 355

Monetary Policy Transmission 357
 Quick Overview 357
 Interest Rate Changes 357
 Exchange Rate Fluctuations 358
 Money and Bank Loans 359
 The Long-Term Real Interest Rate 359
 Expenditure Plans 359
 The Change in Aggregate Demand, Real GDP,
 and the Price Level 360
 The Fed Fights Recession 360
 The Fed Fights Inflation 362
 Loose Links and Long and Variable Lags 363
 Policy Strategies and Clarity 365

Financial Crisis: Cure and Prevention 368
 The Anatomy of the Financial Crisis 368
 The Fed’s Policy Actions in Crisis 368
 Congress’s Policy Actions in Crisis 368
 Macroprudential Regulation 369

■ ECONOMICS IN ACTION, 365

■ AT ISSUE, 366

■ ECONOMICS IN THE NEWS, 364, 370

CHAPTER 15 ♦ INTERNATIONAL TRADE POLICY 377

How Global Markets Work 378
 International Trade Today 378
 What Drives International Trade? 378
 Why the United States Imports T-Shirts 379
 Why the United States Exports Airplanes 380

Winners, Losers, and the Net Gain
 from Trade 381
 Gains and Losses from Imports 381
 Gains and Losses from Exports 381
 Gains for All 381

International Trade Restrictions 382
 Tariffs 382
 Import Quotas 384
 Other Import Barriers 387
 Export Subsidies 387

The Case Against Protection 388
 Helps an Infant Industry Grow 388
 Counteracts Dumping 388
 Saves Domestic Jobs 388
 Allows Us to Compete with Cheap Foreign
 Labor 388
 Penalizes Lax Environmental Standards 389
 Prevents Rich Countries from Exploiting
 Developing Countries 389
 Reduces Offshore Outsourcing that Sends Good
 U.S. Jobs to Other Countries 389
 Winners and Losers 389
 Avoiding Trade Wars 390
 Why Is International Trade Restricted? 390
 Compensating Losers 391

■ ECONOMICS IN ACTION, 378, 383, 384

■ AT ISSUE, 390

■ ECONOMICS IN THE NEWS, 386, 392

PART FIVE WRAP-UP ♦

Understanding Macroeconomic Policy
 Tradeoffs and Free Lunches 399

Talking with
 Stephanie Schmitt-Grohé 400

Glossary **G-1**
 Index **I-1**
 Credits **C-1**



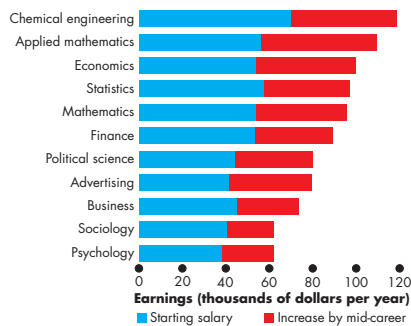
New To This Edition

All data figures, tables, and explanations thoroughly updated to the latest available; five main content changes; 20 new Economics in the News items based on recent events and issues; almost 70 new news-based problems and applications; and all seamlessly integrated with MyLab Economics and Pearson eText. These are the hallmarks of this thirteenth edition of *Economics*.

Main Content Changes

Chapter 1 now contains an entirely new section, “Economists in the Economy”, which describes the types of jobs available to economics majors, their earnings compared with majors in other related areas, and the critical thinking, analytical, math, writing, and oral communication skills needed for a successful career in economics.

FIGURE 1.4 Earnings of Economics Majors



Economics majors are not the highest earners—chemical engineers and applied mathematicians earn more—but at \$100,000 a year in mid-career, economists earn more than most other majors.

Source of data: American Economics Association, <https://www.aeaweb.org/resources/students/careers/earnings>

MyLab Economics Animation

Chapter 2 has a new section prompted by the ongoing concern about the rust-belt economy, its causes and cures, which describes and illustrates the changing patterns of production as an economy expands, and explains how technical change and economic growth first shrinks the share of agriculture as manufacturing expands and later shrinks the share of manufacturing as services expand.

Chapter 2 also has an expanded explanation and graphical derivation of the outward-bowed *PPF*.

A revised *At Issue* in Chapter 14 ‘Support for and Opposition to Keeping Interest Rates Low,’ contrasts the views of two new Fed presidents, Loretta Mester of the Cleveland Fed and Esther George of the Kansas City Fed, with those of Fed Chair, Janet Yellen.

AT ISSUE

Support for and Opposition to Keeping Interest Rates Low

At an FOMC meeting held in September 2017, the FOMC decided to maintain the target range for the federal funds rate at 1 to 1.25 percent. The Committee expected economic conditions to evolve in a manner that will warrant gradual increases in the federal funds rate but also expected it to remain low for some time. Nine FOMC members supported this decision and no one voted against. But some regional Fed presidents want to be more cautious about inflation and raise the interest rate earlier. Let’s look at both sides of this issue.

Janet Yellen and the FOMC say ...

- The Fed’s mandate is to foster maximum employment and price stability.
- In the conditions of September 2017, inflation was subdued, so price stability was not in danger.
- Unemployment was low but real GDP growth continued to be weak.
- Further risks to growth were coming from the global and domestic political uncertainty.
- Because prices were stable and growth slow, monetary stimulus was still needed.
- The federal funds rate was already at a low level.
- Downward pressure on long-term interest rates was still needed.
- By keeping the federal funds rate low and raising it only when “economic conditions ... evolve in a manner that ... warrants gradual increases,” the Fed can boost aggregate demand and contribute to maintaining full employment and price stability.

Two Fed Presidents say ...

- Loretta Mester, President of the Cleveland Fed, says the Fed can’t wait for inflation to rise to 2 percent before raising the federal funds rate target. She wants the Fed to be “pre-emptive on inflation.”
- Esther George, President of the Kansas City Fed, also expresses concern that interest rates are moving too slowly.
- She says in order to not overheat the economy, the Fed should begin to raise rates in a gradual fashion.
- The views of these two Fed presidents are consistent with the fact that the time lags in the effects of interest rate changes are long and variable.
- Today’s interest rate will influence the inflation rate around two years in the future, so the Fed must set the interest rate based on the expected future inflation rate, not on today’s low inflation.



By keeping interest rates low until economic conditions evolve to warrant a gradual increase, the Fed can stimulate spending without bringing inflation, believes Janet Yellen, chair of the Fed.



The Fed needs to be pre-emptive on inflation, says Loretta Mester of the Cleveland Fed.



The Fed should avoid overheating the economy, says Esther George of the Kansas City Fed.

Chapter 7 has been reorganized and streamlined with less on the 2007–2008 financial crisis and more on the fluctuating sources of loanable funds.

Chapter 14 has a new explanation of the federal funds rate “corridor” and a reworked final section now titled “Financial Crisis: Cure and Prevention”, which includes material on Dodd–Frank, the Volcker Rule, and other macroprudential regulation.

Economics in the News

The new *Economics in the News* features are listed on the back inside cover. They are all chosen to address current issues likely to interest and motivate the student. An example is the one in Chapter 2 on the Rust Belt.

ECONOMICS IN THE NEWS

Production Possibilities in the Rust Belt

Can President Trump Rescue the Rust Belt?

The Wall, March 16, 2017

President Trump promised to reverse the decades-long decline of manufacturing jobs. Can it be done?

... The region, which stretches from western New York to Pennsylvania, Ohio, Michigan, Indiana, Illinois, and Wisconsin, has been in serious decline since 1979—the year that U.S. manufacturing employment peaked. Over the past four decades, manufacturing jobs have plunged by 7 million in factories have downsized, closed, and outsourced work to low-wage countries such as Mexico and China. ...

Trump already claims credit for preserving several companies, including Carrier, to keep or create jobs in the U.S. ... in exchange for various economic incentives. [And he] has floated the possibility of tariffs and import taxes of 20 to 35 percent on products made in Mexico, China, and other countries. ...

Will these policies work? Few economists think so. ... About 85 percent of the 5 million factory jobs lost between 2000 and 2010 can be blamed on technology and robots, according to a Ball State University study. That’s why virtually all economists agree that bringing back millions of lost jobs is unlikely. ...

So, are Rust Belt workers doomed? Not necessarily. But economists agree they do need to be retrained for the new manufacturing age, which requires workers who can program and operate computers and robots. The U.S. will need to fill 3.5 million skilled jobs in specialized manufacturing over the next decade, according to a 2016 White House report. ...

“Can President Trump Rescue the Rust Belt?” *The Wall*, March 16, 2017. (Quoted from <http://www.thewall.com/articles/100101/can-president-trump-rescue-the-rust-belt>)

MyLab Economics Economics in the News

ESSENCE OF THE STORY

- The Rust Belt is hurting because manufacturing jobs have fallen by 7 million since 1979.
- President Trump promises economic incentives to keep or create jobs in the United States and draw investment from Mexico and China.
- Few economists think these policies will work because most of the factory jobs lost resulted from new technology and robots.
- Economists say that Rust Belt workers need to be retrained to operate new technologies.

News-Based Problems and Applications

Just a sample of the topics covered in the 140 new news-based problems and applications include: Shrinking brick-and-mortar retail and expanding online shopping; Amazon's impact on the jobs market; robots improve efficiency; cash is still king for Americans; dismantling NAFTA; paying with smartphone; and the effects of Irma and Harvey on the federal budget.

Solving Teaching and Learning Challenges

To change the way students see the world: this is my goal in teaching economics, in writing this book, and in playing a major role in creating content for MyLab Economics.

Three facts about students are my guiding principles. First, they want to learn, but they are overwhelmed by the volume of claims on their time and energy. So, they must see the relevance to their lives and future careers of what they are being asked to learn. Second, students want to get it, and get it quickly. So, they must be presented with clear and succinct explanations. And third, students want to make sense of today's world and be better prepared for life after school. So, they must be shown how to apply the timeless principles of economics and its models to illuminate and provide a guide to understanding today's events and issues, and the future challenges they are likely to encounter.

The organization of this text and MyLab arise directly from these guiding principles. Each chapter begins with a clear statement of learning objectives that correspond to each chapter section.

The learning resources also arise directly from the three guiding principles, and I will describe them by placing them in five groups:

- Making economics real
- Learning the vocabulary
- Seeing the action and telling the story
- Learning interactively—learning by doing
- MyLab Economics

Making Economics Real

The student needs to see economics as a lens that sharpens the focus on real-world issues and events, and not as a series of logical exercises with no real

purpose. *Economics in the News* and *At Issue* are designed to achieve this goal.

Each chapter opens with a student-friendly vignette that raises a question to motivate and focus the chapter. The chapter explains the principles, or model, that address the question and ends with an *Economics in the News* application that helps students to think like economists by connecting chapter tools and concepts to the world around them. All these news exercises are in MyLab with instant targeted feedback and auto-grading and constant uploading of new current exercises.

In many chapters, an additional briefer *Economics in the News* (shown here) presents a short news clip, supplemented by data where needed, poses some questions, and walks through the answers.

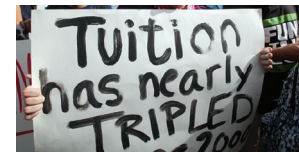
ECONOMICS IN THE NEWS

The Market for College Education

Why Is Tuition So High?

Is tuition high because professors are overpaid? Is it high because of cuts in state support for public colleges? A National Bureau of Economic Research study says tuition is high because of the ready availability of federal student aid. The more money students can borrow, the more colleges can charge.

Source: *Inside Higher Ed*, February 9, 2016



THE DATA

The scatter diagram provides data on college enrollments and tuition from 1971 through 2015.

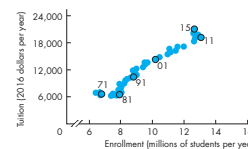


Figure 1 Enrollments and Tuition: 1971–2015

THE QUESTIONS

- What does the scatter diagram tell us?
- Why has college tuition increased? Is it because demand increased or supply decreased?

THE ANSWERS

- The scatter diagram tells us that in most years from 1971 through 2015, both tuition and enrollments increased. In some years, tuition increased and enrollments decreased, but those years are few.
- An increase in demand brings a rise in the price and an increase in the quantity.
- Because both the price (tuition) and quantity (enrollments) increased, the demand for college education increased.
- A decrease in supply brings a rise in price and a decrease in the quantity.
- Because the price and the quantity increased in most years, the supply of college education did not decrease.
- The figure shows the market for college education.

- The supply curve of college education, S , slopes upward because the principle of increasing opportunity cost applies to college education just as it does to other goods and services.
- In 2001, the demand for college education was D_{2001} . The equilibrium tuition was \$14,000 and 10 million students were enrolled in college.
- Between 2001 and 2015:
 - 1) Income per person increased
 - 2) Population increased, and
 - 3) More new jobs required higher education.
- These (and possibly other) factors increased the demand for a college education. The demand curve shifted rightward to D_{2015} . Equilibrium tuition increased to \$21,000 and the quantity supplied increased to 13 million students.

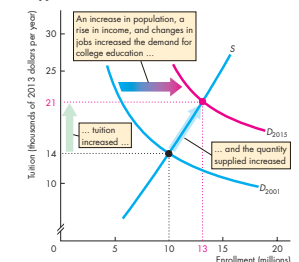


Figure 2 The Market for College Education

MyLab Economics Economics in the News


Five *At Issue* boxes, one of which is new, engage the student in debate and controversy. An *At Issue* box introduces an issue and then presents two opposing views. It leaves the matter unsettled so that students and the instructor can continue the argument in class and reach their own conclusions.

Economics in Action boxes make economics real by providing data and information that links models to real-world economic activity. Some of the issues

covered in these boxes include the best affordable choice of recorded music; the low cost of making and the high cost of selling a pair of shoes; how Apple doesn't make the iPhone; opposing trends in air pollution and carbon concentration; and the size of the fiscal stimulus multipliers.

Interviews with leading economist, whose work correlates to what the student is learning, are the final component of making economics real. These interviews explore the education and research of prominent economists and their advice for those who want to continue studying the subject.

TALKING WITH Esther Dufo*



ESTHER DUFO is the Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at the Massachusetts Institute of Technology. Among her many honors are the 2010 John Bates Clark Medal for the best economist under 40 and the Financial Times and Goldman Sachs Business Book of the Year Award in 2011 for her book (with Abhijit Banerjee) *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. Professor Dufo's research seeks to advance our understanding of the economic choices of the extremely poor by conducting massive real-world experiments.

Professor Dufo was an undergraduate student of history and economics at Ecole Normale Supérieure and completed a master's degree at DESTA in Paris before moving to the United States. She earned her PhD in Economics at MIT in 1999.

Michael Parkin talked with her about her work, which advances our understanding of the economic choices and condition of the very poor.

Professor Dufo, what's the story about how you became an economist and in particular the architect of experiments designed to understand the economic choices of the very poor?

When I was a kid, I was exposed to many stories and images of poor children through my mother's engagement as a doctor in a small NGO dealing with child victims of war and through books and stories about children living all around the world. I remember asking myself how

I could justify my lack of being born where I was. I had a very exaggerated idea of what it was to be poor, but this idea caused sufficient discomfort that I knew

I had to do something about it, if I could. Quite by accident, I discovered that economics was the way in which I could actually be useful. While spending a year in Russia teaching French and studying History, I realized that academic economists have the ability to intervene in the world while keeping enough sanity to analyze it. I thought this would be ideal for me and I have never regretted it. I have the best job in the world.

... imagine living on under a dollar a day after your rent is paid in Seattle or Denver. Not easy!

The very poor whom you study are people who live on \$1 a day or \$2 a day ... Is \$1 a day a true measure that includes everything these poor people consume?

For defining the poverty line, we don't include the cost of housing. The poor also get free goods, sometimes of bad quality (education, healthcare) and the value of those is also not included. Other than that, yes, it is everything.

Moreover, you have to realize this is everything, taking into account the fact that life is much cheaper in many poor countries because salaries are lower, so anything that is made and consumed locally (eg, a haircut) is cheaper.

For example, in India, the purchasing power of a dollar (in terms of the real goods you can buy) is about 3 times what it is in the United States. So the poverty line we use for India is 33 cents per day, not a dollar.

All told, you really have to imagine living on under a dollar a day after your rent is paid in Seattle or Denver. Not easy!

Learning the Vocabulary

Learning the vocabulary isn't exciting, but it is the vital first step to every discipline and it needs to be effective and quick. Highlighted key terms simplify this task. Each key term is defined in the sentence in which it is highlighted and appears in an end-of-chapter list and the end-of-book glossary (both with its page number); boldfaced in the index; and in MyLab Economics in an interactive glossary, Flash Card tool, and in an auto-graded Key Terms Quiz with targeted student feedback.

Key Terms

Change in demand, 62	Demand curve, 62
Change in supply, 67	Equilibrium price, 70
Change in the quantity demanded, 65	Equilibrium quantity, 70
Change in the quantity supplied, 68	Inferior good, 64
Competitive market, 60	Law of demand, 61
Complement, 63	Law of supply, 66
Demand, 61	Money price, 60
	Normal good, 64

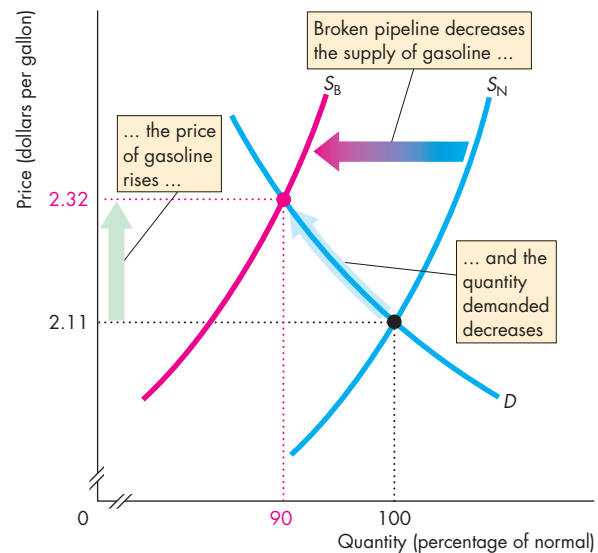
MyLab Economics Key Terms Quiz

Quantity demanded, 61
Quantity supplied, 66
Relative price, 60
Substitute, 63
Supply, 66
Supply curve, 66

Showing the Action and Telling the Story

Through the past twelve editions, this book has set the standard of clarity in its diagrams; the thirteenth edition continues to uphold this tradition. My goal is to show "where the economic action is." The diagrams in this book continue to generate an enormously positive response, which confirms my view that graphical analysis is the most powerful tool available for teaching and learning economics at the principles level.

Recognizing that some students find graphs hard to work with, I have developed the entire art program with the study and review needs of the student in mind.



The Market for Gasoline

The diagrams feature

- Axes that measure and display concrete real-world data, and where possible and relevant, the most recent data
- Graphs paired with data tables from which curves are plotted
- Original curves consistently shown in blue
- Shifted curves, equilibrium points, and other important features highlighted in red
- Color-blended arrows to indicate movement
- Diagrams labeled with boxed notes that tell the story
- Extended captions that make each diagram and its caption a self-contained object for study and review

Learning Interactively—Learning by Doing

At the end of every chapter section, a *Review Quiz* invites the student to rework the section with questions that cover the key ideas. A parallel set of questions

in MyLab Study Plan enable the student to work the questions and get instant targeted feedback.

As part of the chapter review, the student has an opportunity to work a multi-part problem that covers the core content of the chapter and consists of questions, solutions, key points, and a key figure. This feature increases the incentive for the student to learn-by-doing and review the chapter actively, rather than passively. The worked problems are also available in MyLab Study Plan along with interactive animations of the problem's key figure.

MyLab™ Economics

Reach Every Student with MyLab

Economics MyLab is the teaching and learning platform that empowers you to reach *every* student. By combining trusted author content with digital tools and a flexible platform, MyLab personalizes the learning experience and improves results for each student. Learn more about MyLab Economics. With our new enhanced Pearson eText, students will be able to interact with **Figure Animations** right in line with the text. Each chapter then concludes with a **Worked Problem** that consists of questions, solutions, and a key figure.

Deliver Trusted Content You deserve teaching materials that meet your own high standards for your course. That's why we partner with highly respected authors to develop interactive content and course-specific resources that you can trust — and that keep your students engaged. The **Economics in the News** stories address current issues that are likely to interest and motivate students, and are available to be assigned and auto-graded within MyLab Economics.

Empower Each Learner Each student learns at a different pace. Personalized learning pinpoints the precise areas where each student needs practice; giving all students the support they need — when and where they need it — to be successful.

Teach Your Course Your Way Your course is unique. So whether you'd like to build your own assignments, teach multiple sections, or set prerequisites, MyLab Economics gives you the flexibility to easily create *your* course to fit *your* needs. For instructors who want to make the most recent data a central part of their course, **Real-Time Data Analysis** exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED site, so every time FRED posts new data, students can see the most recent data update automatically.

Improve Student Results When you teach with MyLab, student performance improves. That's why instructors have chosen MyLab for over 15 years, touching the lives of over 50 million students.

Developing Employability Skills

The economic way of thinking is a foundational skill for citizenship and career. Every feature of the text helps the student develop this skill, repeatedly using its central ideas of tradeoff; opportunity cost; the margin; incentives; the gains from voluntary exchange; the forces of demand, supply, and equilibrium; the pursuit of economic rent; and the tension between self-interest and the social interest.

The new section of Chapter 1, “Economists in the Economy”, identifies a further five general skills that are crucial for getting a job and developing a successful career. The table lists these skills and the features of this text that promote them.

CAREER SKILLS AND THE FEATURES THAT PROMOTE THEM

Skill	Feature
Critical thinking	Economics in the News At Issue
Analytical skills	The economic way of thinking Manipulation of models Application of models Graphical analysis
Math skills	Math appendices
Writing skills	Review Quiz and end-of-Chapter problems and applications as short-answer written assignments
Oral communication skills	Economics in the News and At Issue as topics for classroom discussion and debate

Table of Contents Overview and Flexibility

You have preferences for how you want to teach your course, and I've organized this book to enable you to choose your teaching path. The chart on p. x illustrates the book's flexibility. By following the arrows through the chart you can select the path that best fits your preference for course structure. Whether you want to teach a traditional course that blends theory and policy, or one that takes a fasttrack through either theory or policy issues, this text gives you the choice.

Instructor Teaching Resources

The program comes with the following teaching resources.

Supplements available to instructors at www.pearsonhighered.com/irc	Features of the Supplement
Instructor's Manual <i>Macroeconomics</i> Instructor's Manual by Russ McCullough, Ottawa University	<ul style="list-style-type: none"> ● Chapter-by-chapter overviews ● List of what's new in the thirteenth edition ● Ready-to-use lecture notes
Solutions Manual <i>Macroeconomics</i> Solutions Manual by Mark Rush, University of Florida	<ul style="list-style-type: none"> ● Solutions to Review Quizzes ● Solutions to the end-of-chapter Study Plan Problems and Applications ● Solutions to the end-of-chapter Additional Problems and Applications
Test Bank New questions for the <i>Macroeconomics</i> Test Bank by Luke Armstrong, Austin Community College, and Alexandra Nica, University of Iowa Mark Rush, University of Florida, reviewed all questions to ensure their clarity and consistency	<ul style="list-style-type: none"> ● Nearly 7,000 multiple-choice, true/false, short-answer, and graphing questions with these annotations: ● Difficulty level (1 for straight recall, 2 for some analysis, 3 for complex analysis) ● Type (Multiple-choice, true/false, short-answer, essay Topic (The term or concept the question supports) AACSB learning standard
Computerized TestGen	<ul style="list-style-type: none"> ● TestGen enables instructors to: <ul style="list-style-type: none"> ■ Customize, save, and generate classroom tests ■ Edit, add, or delete questions from the Test Item Files ■ Analyze test results ■ Organize a database of tests and student results.
PowerPoints	<ul style="list-style-type: none"> ● Slides include: <ul style="list-style-type: none"> ■ Lectures with all the textbook figures and tables animated and speaking notes from the Instructor's Manuals ■ Large-scale versions of all textbook figures and tables animated, for instructors to incorporate into their own slide shows ● A student version of the lectures with animated textbook figures and tables. ● Accessibility PowerPoints meet standards for students with disabilities. Features include, but not limited to: <ul style="list-style-type: none"> ■ Keyboard and Screen Reader access ■ Alternative text for images ■ High color contrast between background and foreground colors

Acknowledgments

I thank my current and former colleagues and friends at the University of Western Ontario who have taught me so much. They are Jim Davies, Jeremy Greenwood, Ig Horstmann, Peter Howitt, Greg Huffman, David Laidler, Phil Reny, Chris Robinson, John Whalley, and Ron Wonnacott. I also thank Doug McTaggart and Christopher Findlay, co-authors of the Australian edition, and Melanie Powell and Kent Matthews, co-authors of the European edition. Suggestions arising from their adaptations of earlier editions have been helpful to me in preparing this edition.

I thank Rebecca Stein for her thoughtful suggestions and constructive criticism that brought extensive improvement to my treatment of health-care, public goods, and externalities; Yoram Bauman for careful and helpful reviews of my coverage of environmental externalities; and Sameh Ajlouni of Yarmouk University for spotting an error.

I thank the several thousand students whom I have been privileged to teach. The instant response that comes from the look of puzzlement or enlightenment has taught me how to teach economics.

It is a special joy to thank the many outstanding people at Pearson who contributed to the concerted publishing effort that brought this edition to completion. Denise Clinton played a major role in the evolution of this text since its third edition, and her insights and ideas can still be found throughout this new edition.

Donna Battista, Vice President, Business Publishing, is hugely inspiring and has provided overall direction to the project.

As ever, Adrienne D'Ambrosio, Director of Portfolio Management, played a major role in shaping this revision and the many outstanding supplements that accompany it. Adrienne brings intelligence and insight to her work and is the unchallengeable pre-eminent economics director. Ashley Bryan, Portfolio Manager, directed the development of this edition. Heather Johnson, Project Manager, oversaw the production and design process, coordinated the photo research program, and worked with rights and permissions advisors. Nancy Freihofer, Content Producer, provided a steady hand throughout the revision process and managed the team of supplements authors.

Digital Content Team Lead Noel Lotz managed a complex and thorough reviewing process for the content of MyLab Economics; and Melissa Honig, Digital Studio Project Manager, ensured that all our media assets were correctly assembled.

Tricia Murphy, Senior Product Marketer, and Carlie Marvel, Senior Field Marketing Manager, provided inspired marketing strategy and direction.

Catherine Baum provided a careful, consistent, and intelligent copy edit and accuracy check, and wrote original news articles for Economics in the News. And Heather Johnson with the other members of an outstanding editorial and production team at Integra kept the project on track on a tight schedule.

I thank all of these wonderful people. It has been inspiring to work with them and to share in creating what I believe is a truly outstanding educational tool.

I thank our talented thirteenth edition supplements authors and contributors—Luke Armstrong, Svitlana Maksymenko, Russ McCullough, Alexandra Nica, Jim Self, Laurie Wolff, and Jeannie Shearer. Thanks, also, to Trevor Collier of the University of Dayton for reviewing MyLab exercises.

I especially thank Mark Rush, who yet again played a crucial role in creating another edition of this text and package. Mark has been a constant source of good advice and good humor.

I thank the many exceptional reviewers who have shared their insights through the various editions of this book. Their contribution has been invaluable.

I thank the people who work directly with me. Jeannie Shearer provided outstanding research assistance on many topics, including finding news articles and creating MyLab exercises. Richard Parkin created the electronic art files and offered many ideas that improved the figures in this book. Robin Bade managed an ever-growing and ever more complex MyLab database. And Sharmistha Nag helped me to create news-based exercises, Real-Time Data Analysis questions, and Draw Graph exercises.

As with the previous editions, this one owes an enormous debt to Robin Bade. I dedicate this book to her and again thank her for her work. I could not have written this book without the tireless and selfless help she has given me. My thanks to her are unbounded.

Classroom experience will test the value of this book. I would appreciate hearing from instructors and students about how I can continue to improve it in future editions.

Michael Parkin
London, Ontario, Canada
michael.parkin@uwo.ca

 **Reviewers**

Eric Abrams, Hawaii Pacific University
Christopher Adams, Federal Trade Commission
John T. Addison, University of South Carolina
Tajudeen Adenekan, Bronx Community College
Syed Ahmed, Cameron University
Frank Albritton, Seminole Community College
Milton Alderfer, Miami-Dade Community College
William Aldridge, Shelton State Community College
Donald L. Alexander, Western Michigan University
Terence Alexander, Iowa State University
Stuart Allen, University of North Carolina, Greensboro
Sam Allgood, University of Nebraska, Lincoln
Neil Alper, Northeastern University
Alan Anderson, Fordham University
Lisa R. Anderson, College of William and Mary
Jeff Ankrom, Wittenberg University
Fatma Antar, Manchester Community Technical College
Kofi Apraku, University of North Carolina, Asheville
John Atkins, University of West Florida
Moshen Bahmani-Oskooee, University of Wisconsin, Milwaukee
Donald Balch, University of South Carolina
Mehmet Balcilar, Wayne State University
Paul Ballantyne, University of Colorado
Tannista Banerjee, Auburn University
Sue Bartlett, University of South Florida
Jose Juan Bautista, Xavier University of Louisiana
Klaus Becker, Texas Tech University
Valerie R. Bencivenga, University of Texas, Austin
Ben Bernanke, Chairman of Federal Reserve
Radha Bhattacharya, California State University, Fullerton
Margot Biery, Tarrant County College, South
John Bittorowitz, Ball State University
David Black, University of Toledo
Kelly Blanchard, Purdue University
S. Brock Blomberg, Claremont McKenna College
William T. Bogart, Case Western Reserve University
Giacomo Bonanno, University of California, Davis
Tan Khay Boon, Nanyang Technological University
Sunne Brandmeyer, University of South Florida
Audie Brewton, Northeastern Illinois University
Baird Brock, Central Missouri State University
Avis Brown, Dallas Community College District
Byron Brown, Michigan State University
Imam Bulbul, University of Miami
Jeffrey Buser, Columbus State Community College
Alison Butler, Florida International University
Colleen Callahan, American University
Tania Carbiener, Southern Methodist University
Kevin Carey, American University
Scott Carrell, University of California at Davis
Kathleen A. Carroll, University of Maryland, Baltimore County

Michael Carter, University of Massachusetts, Lowell
Edward Castronova, California State University, Fullerton
Francis Chan, Fullerton College
Ming Chang, Dartmouth College
Subir Chakrabarti, Indiana University-Purdue University
Joni Charles, Texas State University
Adhip Chaudhuri, Georgetown University
Gopal Chengalath, Texas Tech University
Daniel Christiansen, Albion College
Kenneth Christianson, Binghamton University
John J. Clark, Community College of Allegheny County, Allegheny Campus
Cindy Clement, University of Maryland
Meredith Clement, Dartmouth College
Michael B. Cohn, U. S. Merchant Marine Academy
Robert Collinge, University of Texas, San Antonio
Carol Condon, Kean University
Doug Conway, Mesa Community College
Larry Cook, University of Toledo
Bobby Corcoran, retired, Middle Tennessee State University
Kevin Cotter, Wayne State University
James Peery Cover, University of Alabama, Tuscaloosa
Erik Craft, University of Richmond
Eleanor D. Craig, University of Delaware
Jim Craven, Clark College
Jeremy Cripps, American University of Kuwait
Elizabeth Crowell, University of Michigan, Dearborn
Stephen Cullenberg, University of California, Riverside
David Culp, Slippery Rock University
Megan Cummins, Santiago Canyon College
Norman V. Cure, Macomb Community College
Dan Dabney, University of Texas, Austin
Andrew Dane, Angelo State University
James D'Angelo, University of Cincinnati
Joseph Daniels, Marquette University
Gregory DeFreitas, Hofstra University
David Denslow, University of Florida
Shatakshee Dhongde, Rochester Institute of Technology
Iris Diamond, Austin Community College
Mark Dickie, University of Central Florida
James Dietz, California State University, Fullerton
Carol Dole, State University of West Georgia
Ronald Dorf, Inver Hills Community College
John Dorsey, University of Maryland, College Park
Eric Drabkin, Hawaii Pacific University
Amrik Singh Dua, Mt. San Antonio College
Thomas Duchesneau, University of Maine, Orono
Lucia Dunn, Ohio State University
Donald Dutkowsky, Syracuse University
John Edgren, Eastern Michigan University
David J. Eger, Alpena Community College
Harold W. Elder, University of Alabama
Harry Ellis, Jr., University of North Texas

- Ibrahim Elsaify**, Goldey-Beacom College
Kenneth G. Elzinga, University of Virginia
Patrick Emerson, Oregon State University
Tisha Emerson, Baylor University
Monica Escaleras, Florida Atlantic University
Antonina Espiritu, Hawaii Pacific University
Gwen Eudey, University of Pennsylvania
Barry Falk, Iowa State University
M. Fazeli, Hofstra University
Philip Fincher, Louisiana Tech University
F. Firoozi, University of Texas, San Antonio
Lou Foglia, Suffolk University
Nancy Folbre, University of Massachusetts, Amherst
Kenneth Fong, Temasek Polytechnic (Singapore)
Steven Francis, Holy Cross College
David Franck, University of North Carolina, Charlotte
Mark Frank, Sam Houston State University
Roger Frantz, San Diego State University
Mark Frascatore, Clarkson University
Alwyn Fraser, Atlantic Union College
Connel Fullenkamp, Duke University
Marc Fusaro, East Carolina University
James Gale, Michigan Technological University
Susan Gale, New York University
Roy Gardner, Indiana University
Sacha Gelfer, Bentley University
Eugene Gentzel, Pensacola Junior College
Kirk Gifford, Brigham Young University-Idaho
Scott Gilbert, Southern Illinois University, Carbondale
Andrew Gill, California State University, Fullerton
Robert Giller, Virginia Polytechnic Institute and State University
Robert Gillette, University of Kentucky
James N. Giordano, Villanova University
Maria Giuli, Diablo College
Susan Glanz, St. John's University
Robert Gordon, San Diego State University
Richard Gosselin, Houston Community College
Paul Graf, Indiana University - Bloomington
John Graham, Rutgers University
John Griffen, Worcester Polytechnic Institute
Wayne Grove, Syracuse University
Robert Guell, Indiana State University
William Gunther, University of Southern Mississippi
Jamie Haag, Pacific University, Oregon
Gail Heyne Hafer, Lindenwood University
Rik W. Hafer, Southern Illinois University, Edwardsville
Daniel Hagen, Western Washington University
David R. Hakes, University of Northern Iowa
Craig Hakkio, Federal Reserve Bank, Kansas City
Bridget Gleeson Hanna, Rochester Institute of Technology
Ann Hansen, Westminster College
Seid Hassan, Murray State University
Jonathan Haughton, Suffolk University
Randall Haydon, Wichita State University
Denise Hazlett, Whitman College
Julia Heath, University of Memphis
Jac Heckelman, Wake Forest University
Jolien A. Helsel, Kent State University
James Henderson, Baylor University
Doug Herman, Georgetown University
Jill Boylston Herndon, University of Florida
Gus Herring, Brookhaven College
John Herrmann, Rutgers University
Andrew Hill, Temple University
John M. Hill, Delgado Community College
Jonathan Hill, Florida International University
Lewis Hill, Texas Tech University
Steve Hoagland, University of Akron
Tom Hoerger, Fellow, Research Triangle Institute
Calvin Hoerneman, Delta College
George Hoffer, Virginia Commonwealth University
Dennis L. Hoffman, Arizona State University
Paul Hohenberg, Rensselaer Polytechnic Institute
Jim H. Holcomb, University of Texas, El Paso
Robert Holland, Purdue University
Harry Holzer, Georgetown University
Linda Hooks, Washington and Lee University
Gary Hoover, University of Oklahoma
Jim Horner, Cameron University
Djehane Hosni, University of Central Florida
Harold Hotelling, Jr., Lawrence Technical University
Calvin Hoy, County College of Morris
Ing-Wei Huang, Assumption University, Thailand
Julie Hunsaker, Wayne State University
Beth Ingram, University of Iowa
Jayvanth Ishwaran, Stephen F. Austin State University
Michael Jacobs, Lehman College
S. Hussain Ali Jafri, Tarleton State University
Dennis Jansen, Texas A&M University
Andrea Jao, University of Pennsylvania
Barbara John, University of Dayton
Barry Jones, Binghamton University
Garrett Jones, Southern Florida University
Frederick Jungman, Northwestern Oklahoma State University
Paul Junk, University of Minnesota, Duluth
Leo Kahane, California State University, Hayward
Veronica Kalich, Baldwin-Wallace College
John Kane, State University of New York, Oswego
Eungmin Kang, St. Cloud State University
Arthur Kartman, San Diego State University
Theresa Kauffman, Chattahoochee Technical College
Gurmit Kaur, Universiti Teknologi (Malaysia)
Louise Keely, University of Wisconsin, Madison
Manfred W. Keil, Claremont McKenna College
Elizabeth Sawyer Kelly, University of Wisconsin, Madison
Rose Kilburn, Modesto Junior College

Amanda King, Georgia Southern University
John King, Georgia Southern University
Robert Kirk, Indiana University-Purdue University, Indianapolis
Norman Kleinberg, City University of New York, Baruch College
Robert Kleinhenz, California State University, Fullerton
Barry Kotlove, Edmonds Community College
John Krantz, University of Utah
Joseph Kreitzer, University of St. Thomas
Patricia Kuzyk, Washington State University
David Lages, Southwest Missouri State University
W. J. Lane, University of New Orleans
Leonard Lardaro, University of Rhode Island
Kathryn Larson, Elon College
Luther D. Lawson, University of North Carolina, Wilmington
Elroy M. Leach, Chicago State University
Jim Lee, Texas A & M, Corpus Christi
Sang Lee, Southeastern Louisiana University
Robert Lemke, Florida International University
Mary Lesser, Iona College
Philip K. Letting, Harrisburg Area Community College
Jay Levin, Wayne State University
Arik Levinson, University of Wisconsin, Madison
Tony Lima, California State University, Hayward
William Lord, University of Maryland, Baltimore County
Nancy Lutz, Virginia Polytechnic Institute and State University
Brian Lynch, Lakeland Community College
Murugappa Madhavan, San Diego State University
K. T. Magnusson, Salt Lake Community College
Mark Maier, Glendale Community College
Svitlana Maksymenko, University of Pittsburgh
Jean Mangan, Staffordshire University Business School
Denton Marks, University of Wisconsin, Whitewater
Michael Marlow, California Polytechnic State University
Akbar Marvasti, University of Houston
Wolfgang Mayer, University of Cincinnati
John McArthur, Wofford College
Katherine McClain, University of Georgia
Amy McCormick, Mary Baldwin College
Russ McCullough, Iowa State University
Catherine McDevitt, Central Michigan University
Gerald McDougall, Wichita State University
Stephen McGary, Brigham Young University-Idaho
Richard D. McGrath, Armstrong Atlantic State University
Richard McIntyre, University of Rhode Island
John McLeod, Georgia Institute of Technology
Mark McLeod, Virginia Polytechnic Institute and State University
B. Starr McMullen, Oregon State University
Sandra McPherson, Millersville University
Mary Ruth McRae, Appalachian State University
Kimberly Merritt, Cameron University
Charles Meyer, Iowa State University
Peter Mieszkowski, Rice University
John Mijares, University of North Carolina, Asheville

Richard A. Miller, Wesleyan University
Judith W. Mills, Southern Connecticut State University
Glen Mitchell, Nassau Community College
Jeannette C. Mitchell, Rochester Institute of Technology
Bagher Modjtahedi, University of California, Davis
Michael A. Mogavero, University of Notre Dame
Khan Mohabbat, Northern Illinois University
Shahruz Mohtadi, Suffolk University
Barbara Moore, University of Central Florida
W. Douglas Morgan, University of California, Santa Barbara
William Morgan, University of Wyoming
James Morley, Washington University in St. Louis
William Mosher, Clark University
Joanne Moss, San Francisco State University
Nivedita Mukherji, Oakland University
Francis Mummery, Fullerton College
Edward Murphy, Southwest Texas State University
Kevin J. Murphy, Oakland University
Kathryn Nantz, Fairfield University
Arnab Nayak, Mercer University
William S. Neilson, Texas A&M University
Paul Nelson, University of Louisiana, Monroe
Bart C. Nemmers, University of Nebraska, Lincoln
Alexandra Nica, University of Iowa
Melinda Nish, Orange Coast College
Melissa Noel, Austin Community College
Anthony O'Brien, Lehigh University
Norman Obst, Michigan State University
Constantin Ogloblin, Georgia Southern University
Neal Olitsky, University of Massachusetts, Dartmouth
Mary Olson, Tulane University
Terry Olson, Truman State University
James B. O'Neill, University of Delaware
Farley Ordozensky, University of the Pacific
Z. Edward O'Relley, North Dakota State University
Donald Oswald, California State University, Bakersfield
Jan Palmer, Ohio University
Michael Palumbo, Chief, Federal Reserve Board
Chris Papageorgiou, Louisiana State University
G. Hossein Parandvash, Western Oregon State College
Randall Parker, East Carolina University
Robert Parks, Washington University
David Pate, St. John Fisher College
James E. Payne, Illinois State University
Donald Pearson, Eastern Michigan University
Steven Peterson, University of Idaho
Mary Anne Pettit, Southern Illinois University,
 Edwardsville
William A. Phillips, University of Southern Maine
Dennis Placone, Clemson University
Charles Plot, California Institute of Technology, Pasadena
Mannie Poen, Houston Community College
Kathleen Possai, Wayne State University

- Ulrika Praski-Stahlgren**, University College in Gavle-Sandviken, Sweden
- Edward Price**, Oklahoma State University
- Rula Qalyoubi**, University of Wisconsin, Eau Claire
- K. A. Quartey**, Talladega College
- Herman Quirnbach**, Iowa State University
- Jeffrey R. Racine**, University of South Florida
- Ramkishen Rajan**, George Mason University
- Peter Rangazas**, Indiana University-Purdue University, Indianapolis
- Vaman Rao**, Western Illinois University
- Laura Razzolini**, University of Mississippi
- Rob Rebelein**, University of Cincinnati
- J. David Reed**, Bowling Green State University
- Robert H. Renshaw**, Northern Illinois University
- Javier Reyes**, University of Arkansas
- Jeff Reynolds**, Northern Illinois University
- Rupert Rhodd**, Florida Atlantic University
- W. Gregory Rhodus**, Bentley College
- Jennifer Rice**, Indiana University, Bloomington
- John Robertson**, Paducah Community College
- Malcolm Robinson**, University of North Carolina, Greensboro
- Richard Roehl**, University of Michigan, Dearborn
- Carol Rogers**, Georgetown University
- William Rogers**, University of Northern Colorado
- Thomas Romans**, State University of New York, Buffalo
- David R. Ross**, Bryn Mawr College
- Thomas Ross**, Baldwin Wallace College
- Robert J. Rossana**, Wayne State University
- Kurt Rotthoff**, Seton Hall University
- Jeffrey Rous**, University of North Texas
- Rochelle Ruffer**, Youngstown State University
- John Ruggiero**, University of Daytona
- Mark Rush**, University of Florida
- Dasha Safonova**, University of Notre Dame
- Allen R. Sanderson**, University of Chicago
- Gary Santoni**, Ball State University
- Jeffrey Sarbaum**, University of North Carolina at Greensboro
- Peter Saunders**, Central Washington University
- John Saussy**, Harrisburg Area Community College
- Don Schlagenhauf**, Florida State University
- David Schlow**, Pennsylvania State University
- Paul Schmitt**, St. Clair County Community College
- Jeremy Schwartz**, Hampden-Sydney College
- Martin Sefton**, University of Nottingham
- James K. Self**, Indiana University
- Esther-Mirjam Sent**, University of Notre Dame
- Rod Shadbegian**, University of Massachusetts, Dartmouth
- Neil Sheflin**, Rutgers University
- Gerald Shilling**, Eastfield College
- Dorothy R. Siden**, Salem State College
- Mark Siegler**, California State University at Sacramento
- Scott Simkins**, North Carolina Agricultural and Technical State University
- Jacek Siry**, University of Georgia
- Chuck Skoro**, Boise State University
- Phil Smith**, DeKalb College
- William Doyle Smith**, University of Texas, El Paso
- Sarah Stafford**, College of William and Mary
- Rebecca Stein**, University of Pennsylvania
- Frank Steindl**, Oklahoma State University
- Jeffrey Stewart**, New York University
- Rayna Stocheva**, University of Miami
- Allan Stone**, Southwest Missouri State University
- Courtenay Stone**, Ball State University
- Paul Storer**, Western Washington University
- Richard W. Stratton**, University of Akron
- Mark Strazicich**, Ohio State University, Newark
- Michael Stroup**, Stephen F. Austin State University
- Robert Stuart**, Rutgers University
- Della Lee Sue**, Marist College
- Abdulhamid Sukar**, Cameron University
- Terry Sutton**, Southeast Missouri State University
- Gilbert Suzawa**, University of Rhode Island
- David Swaine**, Andrews University
- Christopher Swann**, Temple University
- Manjuri Talukdar**, Northern Illinois University
- Jason Taylor**, Central Michigan University
- Mark Thoma**, University of Oregon
- Janet Thomas**, Bentley College
- Kiril Tochkov**, SUNY at Binghamton
- Kay Unger**, University of Montana
- Anthony Uremovic**, Joliet Junior College
- David Vaughn**, City University, Washington
- Don Waldman**, Colgate University
- Francis Wambalaba**, Portland State University
- Sasiwimon Warunsiri**, University of Colorado at Boulder
- Rob Wassmer**, California State University, Sacramento
- Paul A. Weinstein**, University of Maryland, College Park
- Lee Weissert**, St. Vincent College
- Robert Whaples**, Wake Forest University
- David Wharton**, Washington College
- Mark Wheeler**, Western Michigan University
- Charles H. Whiteman**, University of Iowa
- Sandra Williamson**, University of Pittsburgh
- Brenda Wilson**, Brookhaven Community College
- Larry Wimmer**, Brigham Young University
- Mark Witte**, Northwestern University
- Willard E. Witte**, Indiana University
- Mark Wohar**, University of Nebraska, Omaha
- Laura Wolff**, Southern Illinois University, Edwardsville
- Cheonsik Woo**, Vice President, Korea Development Institute
- Douglas Wooley**, Radford University
- Arthur G. Woolf**, University of Vermont
- John T. Young**, Riverside Community College
- Michael Youngblood**, Rock Valley College
- Peter Zaleski**, Villanova University

Tianwei Zhang, University of Georgia
Jason Zimmerman, South Dakota State University
David Zucker, Martha Stewart Living Omnimedia

Supplements Authors

Luke Armstrong, Lee College
Sue Bartlett, University of South Florida
Kelly Blanchard, Purdue University
James Cobbe, Florida State University
Carol Dole, Jacksonville University
Karen Gebhardt, Colorado State University
John Graham, Rutgers University
Jill Herndon, University of Florida
Gary Hoover, University of Alabama
Patricia Kuzyk, Washington State University
Sang Lee, Southeastern Louisiana University

Svitlana Maksymenko, University of Pittsburgh
Robert Martel, University of Connecticut
Katherine McClain, University of Georgia
Russ McCullough, Iowa State University
Barbara Moore, University of Central Florida
James Morley, Washington University in St. Louis
William Mosher, Clark University
Alexandra Nica, University of Iowa
Constantin Ogloblin, Georgia Southern University
Edward Price, Oklahoma State University
Mark Rush, University of Florida
James K. Self, University of Indiana, Bloomington
Rebecca Stein, University of Pennsylvania
Michael Stroup, Stephen F. Austin State University
Della Lee Sue, Marist College
Nora Underwood, University of Central Florida
Laura A. Wolff, Southern Illinois University, Edwardsville

