

The background of the book cover features a series of concentric circles on the left side, rendered in various shades of brown, tan, and grey. A wide, light-colored diagonal band runs from the top left towards the bottom right, intersecting the circles. The right side of the cover is a solid dark grey.

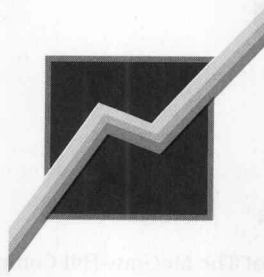
Rudiger Dornbusch

Stanley Fischer

Richard Startz

Macroeconomics

Eleventh
Edition



MACROECONOMICS

Eleventh Edition

RUDIGER DORNBUSCH

Late of Massachusetts Institute of Technology
Ford Professor of Economics and
International Management

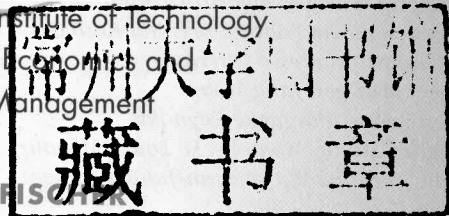
♦ **STANLEY FISCHER**

Bank of Israel Governor

♦ **RICHARD STARTZ**

University of Washington
Castor Professor of Economics

McGraw-Hill
Irwin





MACROECONOMICS, ELEVENTH EDITION

Published by McGraw-Hill, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY 10020. Copyright © 2011 by The McGraw-Hill Companies, Inc. All rights reserved. Previous editions © 2008, 2004, and 2001. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOC/DOC 1 0 9 8 7 6 5 4 3 2 1 0

ISBN 978-0-07-3375922

MHID 0-07-3375926

Vice President & Editor-in-Chief: *Brent Gordon*

Vice President, EDP/Central Publishing Services: *Kimberly Meriwether David*

Publisher: *Douglas Reiner*

Senior Marketing Manager: *Melissa Larmon*

Managing Development Editor: *Christina Kouvelis*

Editorial Coordinator: *Alyssa Otterness*

Senior Project Manager: *Jane Mohr*

Design Coordinator: *Margarite Reynolds*

Cover Designer: *Studio Montage, St. Louis, Missouri*

Cover Credit: © *David Wasserman/Jupiter Images*

Buyer: *Susan K. Culbertson*

Media Project Manager: *Balaji Sundararaman*

Compositor: *Glyph International*

Typeface: *10/12 Times New Roman PS*

Printer: *R. R. Donnelley*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Dornbusch, Rudiger.

Macroeconomics/Rudiger Dornbusch, Stanley Fischer, Richard Startz.—11th ed.

p. cm.

Includes index.

ISBN 978-0-07-337592-2 (alk. paper)

1. Macroeconomics. I. Fischer, Stanley. II. Startz, Richard, 1952- III. Title.

HB172.5.D67 2011

339—dc22

2010038615

The McGraw-Hill Series Economics

ESSENTIALS OF ECONOMICS

Brue, McConnell, and Flynn

Essentials of Economics
Second Edition

Mandel

Economics: The Basics
First Edition

Schiller

Essentials of Economics
Eighth Edition

PRINCIPLES OF ECONOMICS

Colander

**Economics, Microeconomics, and
Macroeconomics**
Eighth Edition

Frank and Bernanke

**Principles of Economics, Principles
of Microeconomics, Principles of
Macroeconomics**
Fourth Edition

Frank and Bernanke

**Brief Editions: Principles of
Economics, Principles of
Microeconomics, Principles
of Macroeconomics**
Second Edition

McConnell, Brue, and Flynn

**Economics, Microeconomics, and
Macroeconomics**
Nineteenth Edition

McConnell, Brue, and Flynn

**Brief Editions: Microeconomics
and Macroeconomics**
First Edition

Miller

Principles of Microeconomics
First Edition

Samuelson and Nordhaus

**Economics, Microeconomics, and
Macroeconomics**
Nineteenth Edition

Schiller

**The Economy Today, The Micro
Economy Today, and The Macro
Economy Today**
Twelfth Edition

Slavin

**Economics, Microeconomics, and
Macroeconomics**
Tenth Edition

ECONOMICS OF SOCIAL ISSUES

Guell

Issues in Economics Today
Fifth Edition

Sharp, Register, and Grimes
Economics of Social Issues
Nineteenth Edition

ECONOMETRICS

Gujarati and Porter

Basic Econometrics
Fifth Edition

Gujarati and Porter

Essentials of Econometrics
Fourth Edition

MANAGERIAL ECONOMICS

Baye

**Managerial Economics and
Business Strategy**
Eighth Edition

Brickley, Smith, and Zimmerman

**Managerial Economics and
Organizational Architecture**
Fifth Edition

Thomas and Maurice

Managerial Economics
Tenth Edition

INTERMEDIATE ECONOMICS

Bernheim and Whinston

Microeconomics
First Edition

Dornbusch, Fischer, and Startz
Macroeconomics
Eleventh Edition

Frank

Microeconomics and Behavior
Eighth Edition

ADVANCED ECONOMICS

Romer

Advanced Macroeconomics
Third Edition

MONEY AND BANKING

Cecchetti and Schoenholtz

**Money, Banking, and Financial
Markets**
Third Edition

URBAN ECONOMICS

O'Sullivan

Urban Economics
Seventh Edition

LABOR ECONOMICS

Borjas

Labor Economics
Fifth Edition

McConnell, Brue, and Macpherson

Contemporary Labor Economics
Ninth Edition

PUBLIC FINANCE

Rosen and Gayer

Public Finance
Ninth Edition

Seidman

Public Finance
First Edition

ENVIRONMENTAL ECONOMICS

Field and Field

**Environmental Economics: An
Introduction**
Fifth Edition

INTERNATIONAL ECONOMICS

Appleyard, Field, and Cobb

International Economics
Seventh Edition

King and King

**International Economics,
Globalization, and Policy:
A Reader**
Fifth Edition

Pugel

International Economics
Fourteenth Edition

*To Rhoda and Shelly
and to the memory of*

*Rudi,
teacher/colleague/friend*

RUDI DOMINUSCH (1917-2002) was Professor of Economics and International Management at the University of Chicago from 1967 to 1997. His research was primarily in international economics with a major focus on the role of the multinational corporation. His special research interests included the behavior of multinational corporations in international markets, the role of multinational corporations in international trade, and the role of multinational corporations in international investment. He received recognition in his field from the American Economic Association, the American Statistical Association, and the American Political Science Association. He was a member of the National Academy of Sciences and the National Academy of Arts and Letters. His writing includes books, articles, and book reviews. His most recent book is *The Role of the Multinational Corporation in International Trade* (1997).

STANLEY FISHKIN is Professor of Economics at the University of Chicago. He was a member of the faculty of the University of Chicago from 1967 to 1997. He was a member of the National Academy of Sciences and the National Academy of Arts and Letters. His research was primarily in international economics with a major focus on the role of the multinational corporation. His special research interests included the behavior of multinational corporations in international markets, the role of multinational corporations in international trade, and the role of multinational corporations in international investment. He received recognition in his field from the American Economic Association, the American Statistical Association, and the American Political Science Association. He was a member of the National Academy of Sciences and the National Academy of Arts and Letters. His writing includes books, articles, and book reviews. His most recent book is *The Role of the Multinational Corporation in International Trade* (1997).

RICHARD FISHKIN is Professor of Economics at the University of Chicago. He was a member of the faculty of the University of Chicago from 1967 to 1997. He was a member of the National Academy of Sciences and the National Academy of Arts and Letters. His research was primarily in international economics with a major focus on the role of the multinational corporation. His special research interests included the behavior of multinational corporations in international markets, the role of multinational corporations in international trade, and the role of multinational corporations in international investment. He received recognition in his field from the American Economic Association, the American Statistical Association, and the American Political Science Association. He was a member of the National Academy of Sciences and the National Academy of Arts and Letters. His writing includes books, articles, and book reviews. His most recent book is *The Role of the Multinational Corporation in International Trade* (1997).



ABOUT THE AUTHORS

RUDI DORNBUSCH (1942–2002) was Ford Professor of Economics and International Management at MIT. He did his undergraduate work in Switzerland and held a PhD from the University of Chicago. He taught at Chicago, at Rochester, and from 1975 to 2002 at MIT. His research was primarily in international economics, with a major macroeconomic component. His special research interests included the behavior of exchange rates, high inflation and hyperinflation, and the problems and opportunities that high capital mobility pose for developing economies. He lectured extensively in Europe and in Latin America, where he took an active interest in problems of stabilization policy, and held visiting appointments in Brazil and Argentina. His writing includes *Open Economy Macroeconomics* and, with Stanley Fischer and Richard Schmalensee, *Economics*.

STANLEY FISCHER is governor of the Bank of Israel. Previously he was vice chairman of Citigroup and president of Citigroup International, and from 1994 to 2002 he was first deputy managing director of the International Monetary Fund. He was an undergraduate at the London School of Economics and has a PhD from MIT. He taught at the University of Chicago while Rudi Dornbusch was a student there, starting a long friendship and collaboration. He was a member of the faculty of the MIT Economics Department from 1973 to 1998. From 1988 to 1990 he was chief economist at the World Bank. His main research interests are economic growth and development; international economics and macroeconomics, particularly inflation and its stabilization; and the economics of transition. www.iie.com/fischer

RICHARD STARTZ is Castor Professor of Economics at the University of Washington. He was an undergraduate at Yale University and received his PhD from MIT, where he studied under Stanley Fischer and Rudi Dornbusch. He taught at the Wharton School of the University of Pennsylvania before moving on to the University of Washington, and he has taught, while on leave, at the University of California–San Diego, the Stanford Business School, and Princeton. His principal research areas are macroeconomics, econometrics, and the economics of race. In the area of macroeconomics, much of his work has concentrated on the microeconomic underpinnings of macroeconomic theory. His work on race is part of a long-standing collaboration with Shelly Lundberg. www.econ.washington.edu/user/startz



PREFACE

The 11th edition of *Macroeconomics* is published 31 years after the first. We have been both amazed and flattered by the response our book has received over those years. Besides its use in the classrooms of many U.S. universities, it has been translated into many languages and used in many countries, from Canada to Argentina to Australia; all over Europe; in India, Indonesia, and Japan; and from China and Albania to Russia. Even before the Czech Republic gained independence from communism, an underground translation was secretly used in macroeconomics seminars at Charles University in Prague. There is no greater pleasure for teachers and textbook authors than to see their efforts succeed so concretely around the world.

We believe that the success of our textbook reflects the unique features it brings to the universe of undergraduate macroeconomics. These features can be summarized as follows:

- **“Compassionate Difficulty”** Through the years we have held the conviction that the best textbook is one written with an abiding respect for both student and instructor. What does this mean exactly? In practice it means that we explore more state-of-the-art research than is customary in undergraduate textbooks, allowing students a point of departure for deeper exploration of various topics and teachers the flexibility to emphasize topics in greater detail. At the same time, however, we have reduced the book’s level of difficulty by providing straightforward explanations, emphasizing concepts over technique, and fitting difficult material into a larger framework so students can see its relevance. We also emphasize how empirical data can explain and test macroeconomic theory by providing numerous illustrations using real-world data.
- **Focus on Models** The best economists have a rich toolbox of simple models they can use to analyze various facets of the economy and know when to apply the right model to answer specific questions. We have consistently focused our textbook on the presentation of a series of simple models relevant to particular issues. We strive to help students understand the importance of a model-based approach to macroeconomic analysis as well as how the various models are connected. Our goal is to produce students who have the capacity to analyze current economic issues in the context of an economic frame of reference, namely, a set of macroeconomic models.
- **International Perspective** It has always been important for students living in countries with highly open economies to understand the important links connecting foreign economies to their own. This is also becoming ever more true in the United States as international goods and financial markets become more intertwined. Recognizing this, we provide two detailed chapters discussing international linkages. The first, Chapter 12, provides a discussion of mainstream intermediate

macroeconomic topics. The second, Chapter 20, gives advanced students the opportunity to explore modern theories of balance-of-payments crises, determinants of exchange rates, and the choice of exchange rate regimes. These chapters give instructors the flexibility to range from touching on a few international topics to a thorough discussion lasting several weeks.

- **Focus on Changing Times** We have strived to present updated data throughout the book, demonstrating key trends and thorough discussions of how such trends might be explained by traditional macroeconomic models.

WHAT'S NEW

The 11th edition of *Macroeconomics* is thoroughly updated to reflect the newest data, and the story of the Great Recession. Graphs, data tables, and empirical homework questions use the latest data available. New boxes include “Who Calls Recessions?,” “The Chinese Growth Miracle,” “A Sticky Experiment” (a story about the great French deflation in the 1700s), “The Multiplier in Practice” (a discussion of estimates of empirical multipliers), “What *Did* Happen When the Interest Rate Hit Zero?,” “The Fed as Market Maker of Last Resort,” and “Hyperinflation Ends with a Bang or a Whimper?” (a review of the end of Zimbabwe’s runaway hyperinflation). New sections discuss alternative measures of unemployment, the reasons we see “jobless recoveries,” unorthodox monetary policy during the Great Recession as well as the enormous fiscal stimulus, and, of course, a discussion of the bubbles and bust that led up to the Great Recession.

ORGANIZATIONAL ALTERNATIVES

A major goal in writing this textbook is to provide one that is comprehensive yet flexible enough to allow teachers to focus a class on their particular interests and time constraints. Our personal preference is to begin at the beginning and work through the entire book (which is, of course, why we organized the material in the way we did), but a number of approaches can be taken to give a different emphasis or simply to reduce the breadth of material covered. Examples of these approaches include

- **An Overview Course** An overview course should contain what we feel is the core of the textbook: Chapters 1 and 2, which introduce the book and provide details on national income accounting; Chapter 5, which gives an overview of aggregate supply and demand; Chapter 6, which presents the aggregate supply curve in more detail; Chapter 7, which discusses the headline issues of inflation and unemployment; Chapter 8, which gives a media-level view on stabilization policy and Chapters 9, 10, and 11, which introduce the goods market, asset market, and some basics of monetary and fiscal policy. Beyond these core chapters the course can be shortened substantially by omitting chapters that focus on the microeconomic detail beneath macroeconomic theory—Chapters 13–16, 18, and 20, for example, which supply such detail for consumption, investment, money markets, and advanced topics respectively. And Chapters 17 and 19, which detail several current issues in policymaking, can be omitted or done only in part. In the United States, Chapters 4, 12, and 20, which present

many basic issues of international interdependence and growth policy, might also be omitted (although probably everyone should do Sections 12-1 and 12-2).

- **A Traditional Aggregate Demand-Oriented Course** For a Keynesian, short-run treatment of the course, the core chapters for the overview course should be emphasized and Chapter 17, which discusses policy, added. Chapter 19, which discusses big macroeconomic events, can be moved ahead of Chapter 13. Chapters 3 and 4, on growth and policies to promote growth, can be moved to the end of the course. And for advanced students, the sections on New Keynesian economics in Chapter 21 might be included.
- **A Classical “Supply-Side” Course** For a classical treatment of the course the core chapters for the overview course can be shortened by de-emphasizing the *IS-LM* material in Chapters 9–11. And in the early chapters greater emphasis might be given to Chapters 3 and 4 on long-run growth. The microeconomics of macroeconomic theory in Chapters 13–15 might also be emphasized, as might the discussion of hyperinflation in Chapter 19. Advanced students may wish to explore the sections on the random walk in GDP and on real business cycles in Chapter 21.
- **A Business School Course** In addition to the core chapters for the overview course, a business school course should emphasize Chapters 16 and 18, which deal with the Federal Reserve and financial markets. And Chapters 3 and 4 on growth can be de-emphasized, while the advanced topics in Chapter 21 can be omitted. For students with an international perspective, Chapter 12 and parts of Chapter 20, especially the discussion of exchange rate determination, might be emphasized.

Throughout the book, we have labeled some material that is technically difficult as “optional.” Many of the optional sections will be fun for students who enjoy a technical challenge, but the instructor should specify clearly which of these sections are required and which are truly optional.

COURSESMART

CourseSmart is a new way for faculty to find and review eTextbooks. It’s also a great option for students interested in accessing their course materials digitally. CourseSmart offers thousands of the most commonly adopted textbooks across hundreds of courses from a wide variety of higher education publishers. It is the only place for faculty to review and compare the full text of a textbook online. At CourseSmart, students can save up to 50 percent off the cost of a print book, reduce their impact on the environment, and gain access to powerful Web tools for learning including full-text search, notes and highlighting, and email tools for sharing notes between classmates. Your eBook also includes tech support in case you ever need help. Finding your eBook is easy. Visit www.CourseSmart.com and search by title, author, or ISBN.

SUPPLEMENTARY MATERIAL

There are several learning and teaching aids that accompany the eleventh edition of *Macroeconomics*. These resources can be found on the text Web site at www.mhhe.com/dornbusch11e. Instructor supplements reside under a password-protected section of the text Web site.



For instructors, an *Instructor's Manual* and *Test Bank* to accompany the text have been prepared by Professor Juergen Fleck of Hollins University. The Instructor's Manual includes chapter summaries, learning objectives, solutions to the end-of-chapter problems, and many additional problems (and their solutions) that can be used for class discussion, homework assignments, or examination questions. The Test Bank contains over 1,000 multiple-choice questions and is available in Word document format.

Also available for instructors are *PowerPoint Presentations*, prepared by Alice Kassens of Roanoke College. The slide presentations contain charts, graphs, examples, and discussion of chapter contents, and can be edited to meet instructor, classroom, and reader needs.

For students, a *Study Guide* and *Multiple-Choice Quizzes* have been prepared by Arabinda Basistha of West Virginia University. The Study Guide contains chapter summaries, key terms, and a wide range of questions and problems, starting from the very easy and progressing in each chapter to material that will challenge the more advanced student. Multiple-Choice Quizzes are available for each chapter, and each quiz contains 10 auto-gradable questions.



ACKNOWLEDGMENTS

In the past we have acknowledged our debts to correspondents, colleagues, and students individually. There is no longer room to do that, but we have to depart from our new rule to thank Kelvin Wong for updates to data and figures, as well as for pushing toward greater clarity of exposition.

Our best efforts notwithstanding, small errors do creep into the text. We are ever grateful to our readers for drawing our attention to such so that they may be squashed. Particular thanks go to Catherine Langlois, Martha Olney, Federico Guerro, and Jimmy Torrez.

In addition, we would like to thank the following teachers for reviewing both this edition and the previous ones.

Current edition: Terry Alexander, Iowa State University; Chandana Chakraborty, University of Oregon; Marcelle Chauvet, University of California–Riverside; James Devault, Lafayette College; Abdollah Ferdowsi, Ferris State University; Federico Guerrero, University of Nevada–Reno; Jang-Ting Guo, University of California; Barry Jones, Binghamton University; Simran Kahai, John Carroll University; Gary Latanich, Arkansas State University; Chris McHugh, Tufts University; W. Douglas Morgan, University of California–Santa Barbara; Robert Rossana, Wayne State University; David Schaffer, University of Wisconsin; Kellen Stanfield, DePauw University; Jay Tontz, California State University–East Bay; Hamid Zangeneh, Widener University; Fred Dekay, Seattle University; David Stockman, University of Delaware; Kusum Ketkar, Vanderbilt University; and Ed Steinberg, New York University.

Previous editions: Stacey Brook, University of Sioux Falls; Miles Cahill, College of the Holy Cross; William Ferguson, Grinnell College; Theodore Hoff, Park University; Philip Rothman, East Carolina University; Farhad Saboori, Albright College; Michael Ben-Gad, University of Houston; Robert Burrus, University of North Carolina–Wilmington; David Butler, University of Western Australia; E. Mine Cinar, Loyola

University–Chicago; Monoranjan Dutta, Rutgers University; Michael Edelstein, Queens College–CUNY; Loretta Fairchild, Nebraska Wesleyan University; James R. Gale, Michigan Technological University; Roy Gobin, Loyola University–Chicago; Steven L. Green, Baylor University; William Hamlen, SUNY–Buffalo; Robert Herren, North Dakota State University; Oscar Jornda, University of California–Davis; Kangoh Lee, Towson State University; Garry MacDonald, Curtin University; Ossma Mikhail, University of Central Florida; Michael Miller, DePaul University; Neil B. Niman, University of New Hampshire; Martha Olney, University of California–Berkeley; Walter Padelford, Union University; John Prestage, Edith Cowan University; Willem Thorbecke, George Mason University; Robert Windle, University of Maryland; and Robert Edward Wright, University of Sterling, United Kingdom.

Finally, we wish to extend our gratitude to the professional editorial staff at McGraw-Hill/Irwin Publishers, especially to Jane Mohr, Christina Kouvelis, and Alyssa Otterness. These dedicated editors and assistants made invaluable contributions that, added together, resulted in the successful completion of this book.

Stanley Fischer
Richard Startz



WEB LINKS FOR FURTHER EXPLORATION

<http://research.stlouisfed.org/fred2>

Federal Reserve Economic Data (FRED II), a database of over 3,000 U.S. economic time series.

www.nber.org/cycles/main.html

Information on business cycle expansions and contractions determined by the National Bureau of Economic Research (NBER).

www.economist.com

Web page of the weekly news magazine, The Economist.

www.aeaweb.org/RFE

Bill Goffe's "Resources for Economists on the Internet."

www.data.gov

Web page with datasets generated by the executive branch of the federal government.

<http://bea.gov/national/index.htm#fixed>

Interactive access to fixed assets tables from the Bureau of Economic Analysis.

<http://books.nap.edu/catalog/6374.html>

William D. Nordhaus and Edward C. Kokkelenberg (eds.), Nature's Numbers: Expanding the National Economic Accounts to Include the Environment.

<http://economics.sbs.ohio-state.edu/jhm/jhm.html>

An up-to-date Web site on real and nominal interest rates.

www.bea.gov

Bureau of Economic Analysis, an official source for U.S. national income accounts.

www.gpoaccess.gov/eop/

The Economic Report of the President, including data tables and past issues.

www.census.gov

United States Census Bureau, a government Web site that provides quality data and historical statistics about the nation's people and economy.

www.statcan.ca/start.html or www.statcan.ca/menu-fr.htm

Statistics Canada, the source for Canadian data.

<http://epp.eurostat.ec.europa.eu/>

European data at the Statistical Office of the European Union.

www.iadb.org/research/home.cfm

American (North and South) data provided by the Inter-American Development Bank.

www.worldbank.org/data

Data on developing countries at the World Bank Web site.

www.nber.org/databases/macrophistory/contents/index.html

Pre-World War II data for several countries at the NBER Web site.

<http://emlab.berkeley.edu/users/chad/HallJones400.asc>

Data on workers' productivity.

<http://pwt.econ.upenn.edu>

Penn World Tables.

www.phil.frb.org

Federal Reserve Bank of Philadelphia (for Livingston Survey data).

www.bls.gov

Bureau of Labor Statistics.

www.eia.doe.gov

Energy Information Administration.

www.gallup.com

Gallup Report.

www.cbo.gov

Congressional Budget Office (CBO).

www.princeton.edu/~pkrugman/

Paul Krugman's Web site.

www.whitehouse.gov/cea

Council of Economic Advisers.

www.federalreserve.gov/fomc

Minutes of the Federal Open Market Committee (FOMC) meetings.

http://nobelprize.org/nobel_prizes/economics/video_lectures.html

Videos of Nobel Prize lectures from Laureates in Economic Sciences.

www.frbsf.org/currency

A picture tour of the history of American currency.

<http://faculty.washington.edu/karyiu/Asia/manuscri.htm>

An excellent chronology of the Asian crises.



CONTENTS

in Brief

PART

1

INTRODUCTION AND NATIONAL INCOME ACCOUNTING 1

1. Introduction 2
2. National Income Accounting 22

PART

2

GROWTH, AGGREGATE SUPPLY AND DEMAND, AND POLICY 51

3. Growth and Accumulation 52
4. Growth and Policy 77
5. Aggregate Supply and Demand 97
6. Aggregate Supply: Wages, Prices, and Unemployment 118
7. The Anatomy of Inflation and Unemployment 145
8. Policy Preview 183

PART

3

FIRST MODELS 193

9. Income and Spending 194
10. Money, Interest, and Income 219
11. Monetary and Fiscal Policy 248
12. International Linkages 283

PART

4

BEHAVIORAL FOUNDATIONS 319

13. Consumption and Saving 320
14. Investment Spending 346
15. The Demand for Money 376
16. The Fed, Money, and Credit 397
17. Policy 422
18. Financial Markets and Asset Prices 450

PART

5

BIG EVENTS, INTERNATIONAL ADJUSTMENTS, AND ADVANCED TOPICS 465

19. Big Events: The Economics of Depression, Hyperinflation, and Deficits 466
20. International Adjustment and Interdependence 514
21. Advanced Topics 557

Appendix 589
Glossary 595
Index 615



CONTENTS

Preface vii

PART

1

INTRODUCTION AND NATIONAL INCOME ACCOUNTING 1

1. INTRODUCTION 2

- 1-1 Macroeconomics Encapsulated in Three Models 4
- 1-2 To Reiterate . . . 11
- 1-3 Outline and Preview of the Text 18
- 1-4 Prerequisites and Recipes 18

2. NATIONAL INCOME ACCOUNTING 22

- 2-1 The Production of Output and Payments to Factors of Production 23
- 2-2 Outlays and Components of Demand 26
- 2-3 Some Important Identities 30
- 2-4 Measuring Gross Domestic Product 35
- 2-5 Inflation and Price Indexes 37
- 2-6 Unemployment 42
- 2-7 Interest Rates and Real Interest Rates 44
- 2-8 Exchange Rates 46
- 2-9 Where to Grab a Look at the Data 47

PART

2

GROWTH, AGGREGATE SUPPLY AND DEMAND, AND POLICY 51

3. GROWTH AND ACCUMULATION 52

- 3-1 Growth Accounting 54
- 3-2 Empirical Estimates of Growth 57
- 3-3 Growth Theory: The Neoclassical Model 61

4. GROWTH AND POLICY 77

- 4-1 Growth Theory: Endogenous Growth 78
- 4-2 Growth Policy 86

5. AGGREGATE SUPPLY AND DEMAND 97
 - 5-1 The Aggregate Supply Curve 101
 - 5-2 The Aggregate Supply Curve and the Price Adjustment Mechanism 104
 - 5-3 The Aggregate Demand Curve 108
 - 5-4 Aggregate Demand Policy under Alternative Supply Assumptions 110
 - 5-5 Supply-Side Economics 112
 - 5-6 Putting Aggregate Supply and Demand Together in the Long Run 114
6. AGGREGATE SUPPLY: WAGES, PRICES, AND UNEMPLOYMENT 118
 - 6-1 Inflation and Unemployment 119
 - 6-2 Stagflation, Expected Inflation, and the Inflation-Expectations-Augmented Phillips Curve 123
 - 6-3 The Rational Expectations Revolution 127
 - 6-4 The Wage-Unemployment Relationship: Why Are Wages Sticky? 128
 - 6-5 From Phillips Curve to the Aggregate Supply Curve 134
 - 6-6 Supply Shocks 137
7. THE ANATOMY OF INFLATION AND UNEMPLOYMENT 145
 - 7-1 Unemployment 148
 - 7-2 Inflation 149
 - 7-3 The Anatomy of Unemployment 149
 - 7-4 Full Employment 156
 - 7-5 The Costs of Unemployment 165
 - 7-6 The Costs of Inflation 167
 - 7-7 Inflation and Indexation: Inflation-Proofing the Economy 172
 - 7-8 Is a Little Inflation Good for the Economy? 175
 - 7-9 Political Business Cycle Theory 176
8. POLICY PREVIEW 183
 - 8-1 A Media Level View of Practical Policy 184
 - 8-2 Policy as a Rule 186
 - 8-3 Interest Rates and Aggregate Demand 188
 - 8-4 Calculating How to Hit the Target 189

PART

3

FIRST MODELS 193

9. INCOME AND SPENDING 194
 - 9-1 Aggregate Demand and Equilibrium Output 195
 - 9-2 The Consumption Function and Aggregate Demand 196

- 9-3 The Multiplier 202
- 9-4 The Government Sector 206
- 9-5 The Budget 210
- 9-6 The Full-Employment Budget Surplus 214
- 10. MONEY, INTEREST, AND INCOME 219
 - 10-1 The Goods Market and the *IS* Curve 224
 - 10-2 The Money Market and the *LM* Curve 232
 - 10-3 Equilibrium in the Goods and Money Markets 239
 - 10-4 Deriving the Aggregate Demand Schedule 241
 - 10-5 A Formal Treatment of the *IS-LM* Model 243
- 11. MONETARY AND FISCAL POLICY 248
 - 11-1 Monetary Policy 250
 - 11-2 Fiscal Policy and Crowding Out 262
 - 11-3 The Composition of Output and the Policy Mix 267
 - 11-4 The Policy Mix in Action 271
- 12. INTERNATIONAL LINKAGES 283
 - 12-1 The Balance of Payments and Exchange Rates 285
 - 12-2 The Exchange Rate in the Long Run 293
 - 12-3 Trade in Goods, Market Equilibrium, and the Balance of Trade 295
 - 12-4 Capital Mobility 299
 - 12-5 The Mundell-Fleming Model: Perfect Capital Mobility under Fixed Exchange Rates 302
 - 12-6 Perfect Capital Mobility and Flexible Exchange Rates 306

PART

4

BEHAVIORAL FOUNDATIONS 319

- 13. CONSUMPTION AND SAVING 320
 - 13-1 The Life-Cycle-Permanent-Income Theory of Consumption and Saving 325
 - 13-2 Consumption under Uncertainty: The Modern Approach 329
 - 13-3 Further Aspects of Consumption Behavior 334
- 14. INVESTMENT SPENDING 346
 - 14-1 The Stock Demand for Capital and the Flow of Investment 350
 - 14-2 Investment Subsectors—Business Fixed, Residential, and Inventory 359
 - 14-3 Investment and Aggregate Supply 370
- 15. THE DEMAND FOR MONEY 376
 - 15-1 Components of the Money Stock 377
 - 15-2 The Functions of Money 380