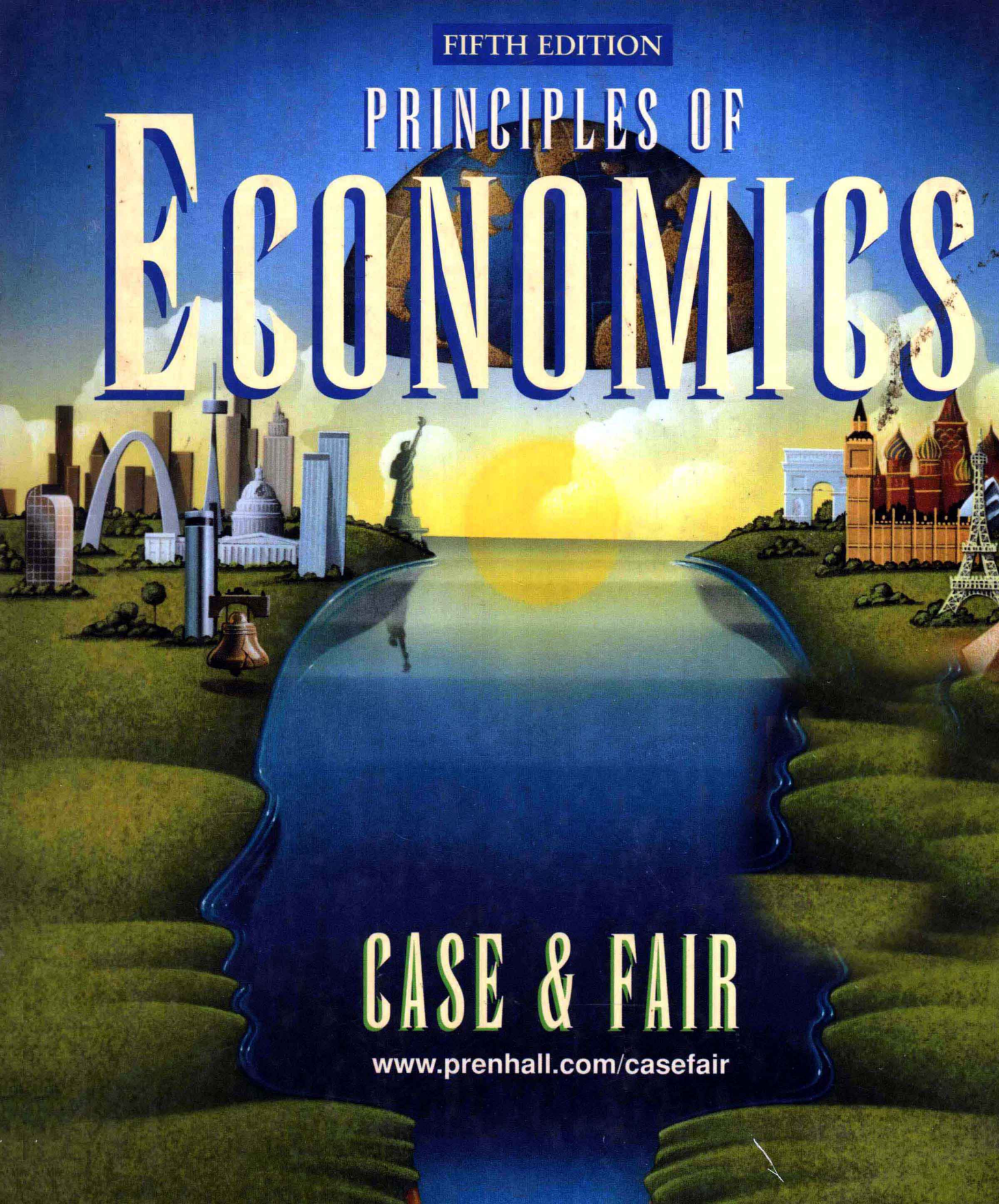


FIFTH EDITION

# PRINCIPLES OF ECONOMICS



CASE & FAIR

[www.prenhall.com/casefair](http://www.prenhall.com/casefair)

FIFTH EDITION

# PRINCIPLES OF ECONOMICS

*Karl E. Case*

WELLESLEY COLLEGE

*Ray C. Fair*

YALE UNIVERSITY



Prentice Hall, Upper Saddle River, New Jersey 07458



<i>Acquisitions Editor:</i>	Rod Banister
<i>Developmental Editor:</i>	Michael Elia
<i>Assistant Editor:</i>	Gladys Soto
<i>Editorial Assistant:</i>	William Becher
<i>Editor-in-Chief:</i>	James Boyd
<i>Marketing Manager:</i>	Patrick Lynch
<i>Associate Managing Editor:</i>	David Salierno
<i>Permissions Coordinator:</i>	Jennifer Rella
<i>Managing Editor:</i>	Dee Josephson
<i>Manufacturing Supervisor:</i>	Arnold Vila
<i>Manufacturing Manager:</i>	Vincent Scelta
<i>Electronic Artist:</i>	Warren Fischbach
<i>Senior Production Manager:</i>	Lorraine Patsco
<i>Designer:</i>	Ann France
<i>Design Manager:</i>	Patricia Smythe
<i>Photo Research Supervisor:</i>	Melinda Lee Reo
<i>Image Permission Supervisor:</i>	Kay Delloso
<i>Photo Researcher:</i>	Melinda Alexander
<i>Cover Illustration:</i>	Theo Rudnak
<i>Project Management/Composition:</i>	TSI Graphics



Copyright ©1999, 1996, 1994, 1992, 1989 by Prentice-Hall, Inc.  
A Simon & Schuster Company  
Upper Saddle River, New Jersey 07458

All rights reserved. No part of this book may be reproduced, in any form or by any means, without written permission from the Publisher.

#### Library of Congress Cataloging-in-Publication Data

Case, Karl E.  
Principles of economics / Karl E. Case, Ray C. Fair. — 5th ed.  
p. cm.  
Includes bibliographical references and index.  
ISBN 0-13-095710-0 (alk. paper)  
1. Economics. I. Fair, Ray C. II. Title.  
HB171.5.C3123 1999  
330—dc21

98-23823  
CIP

Prentice-Hall International (UK) Limited, London  
Prentice-Hall of Australia Pty. Limited, Sydney  
Prentice-Hall Canada, Inc., Toronto  
Prentice-Hall Hispanoamericana, S.A., Mexico  
Prentice-Hall of India Private Limited, New Delhi  
Prentice-Hall of Japan, Inc., Tokyo  
Simon & Schuster Asia Pte. Ltd., Singapore  
Editora Prentice-Hall do Brasil, Ltda., Rio de Janeiro

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

# PREFACE

AS THIS FIFTH edition is being prepared to go on press, we are into the 28th consecutive quarter of expansion in the U.S. economy. Unemployment is at its lowest in nearly 30 years. A number of Asian economies, including Korea, Thailand, and Indonesia, have suffered sharp economic downturns, and even Japan, the world's second largest economy, is suffering through recession and slow growth. Much of Europe is set to adopt a common currency. Hong Kong has become part of China. Congress passed the Taxpayer Relief Act and welfare reform has become reality. The Russian economy has begun to grow. (When our first edition was published in 1989, the Berlin Wall had not yet fallen, the Cold War still chilled international relations, and Iraq had not yet invaded Kuwait.) How rapidly the world is changing!

The degree to which the economic landscape has changed since our fourth edition was published has led to hundreds of changes—some large, some not so large, some you might expect, some not—in this revision. One way of reflecting many of those changes in the landscape is through the new Fast Facts feature we added to every chapter. Each Fast Fact contains some additional data or current example that describes a significant change in the economy. This feature adds depth to the text but does not add bulk, because each Fast Fact is concise and most are written to fit in the margin column.

Revising a book involves adding new material, and there is a tendency for textbooks to grow in volume over time. However, student time is a scarce resource, and longer books are more costly to produce. Therefore, our goal throughout was to update, refine, and add material where needed, but to end up cutting excess baggage and obsolete material wherever possible. The bottom line is that the fifth edition is a shorter book.

All tables and figures have been updated with the most recent data available, and the case studies that end each part are completely new. Although we continue to cover the core of economic theory, we have added new material on important topics that have only recently emerged as major economic issues. These include health-care reform, immigration, urban problems and crime, the balanced budget amendment, welfare reform, the new trade treaties, several countries' recent problems with volatile exchange rates, and the experiences of transitional economies.

In addition, the fifth edition contains more international material than any previous edition. Almost every

chapter contains a global application or example. A complete list of global examples follows the detailed table of contents. We've also added many new problems to the end of each chapter and included solutions to the even-numbered problems at the end of the text.

To date, more than 400,000 students and professors have used *Principles of Economics* or one of its split volumes. In this new edition, we have made every effort to be responsive to our readers' suggestions while maintaining the book's basic focus and pedagogical organization. To make the book accessible to a wider range of students, we have cut a great deal of extraneous material, simplified several of the more analytical sections, and redrawn many of the more technical graphs using numbers rather than variable names. Also, to make the book more appealing to today's visual learners, we've completely revised the art, photo, and illustration program. The result, we hope, is a principles book that students will keep on their shelves and use throughout college and beyond.

## THE PLAN OF THE FIFTH EDITION

Despite major revisions and new features, the themes of the fifth edition are the same themes of the first four editions. The purpose of this book is to introduce the discipline of economics and to provide a basic understanding of how economies function. This requires a blend of economic theory, institutional material, and real-world applications. We have tried to maintain a reasonable balance between these ingredients in every chapter in this book. Like the first four editions, the fifth edition also attempts to present differing theoretical views in an evenhanded way.

Although we have chosen to present microeconomics first, we have designed the text so that professors may proceed directly to macroeconomics after teaching the five introductory chapters.

## MICROECONOMICS

Market research and comments from users of the third edition convinced us that the organization of the microeconomic material is pedagogically sound. For this reason, we have not altered the presentation drastically.

The organization of the microeconomic material continues to reflect our belief that the best way to understand

how market economies operate—and the best way to understand basic economic theory—is to work through the perfectly competitive model first, including discussions of output *and* input markets and the connections between them, before turning to noncompetitive market structures. When students understand how a simple competitive system works, they can start thinking about how the pieces of the economy “fit together.” We think this is a better approach to teaching economics than some of the more traditional approaches, which encourage students to think of economics as a series of disconnected alternative market models.

Doing competition first also allows students to see the power of the market system. It is impossible to discuss the things that markets do well until students have seen how a simple system determines the allocation of resources. This is our purpose in chapters 6–11. Chapter 12 remains a pivotal chapter that links the world of perfect competition with the imperfect world of noncompetitive markets, externalities, imperfect information, and poverty, all of which we discuss in chapters 13–17. In chapters 18–20, students use everything they’ve learned in chapters 6–17 to take a closer look at some of the fields of applied microeconomics (the economics of taxation, labor economics, and the economics of health care, immigration, and the urban problems).

## MACROECONOMICS

Several new textbooks have shifted the emphasis in the presentation of macroeconomics from short-run income determination to long-run growth while de-emphasizing business cycles, the role of countercyclical policy, and the problems of unemployment and inflation. Although we agree that growth deserves more attention in macroeconomics, we have chosen *not* to follow their lead. We remain convinced that the basic structure of aggregate supply and aggregate demand provides a very powerful pedagogical framework within which students can come to understand the nature of the debates that now permeate the professional literature, including the efficacy of monetary and fiscal policy, the role of the Fed, and the factors that determine growth and the cyclical behavior of the economy. We are also convinced that unemployment and inflation remain serious potential problems for economies in the United States and across the world.

Although we have made a number of changes to the content of the macroeconomic material, we remain committed to the view that it is a mistake simply to throw aggregate demand and aggregate supply curves at students in the first few chapters of a principles book. To understand the AS and AD curves, they need to know about the

functioning of the goods market and the money market. The logic behind the simple demand curve is simply wrong when applied to the relationship between aggregate demand and the price level. Similarly, the logic behind the simple supply curve is wrong when applied to the relationship between aggregate supply and the price level.

Part of teaching economics is teaching economic reasoning. Our discipline is built around deductive logic. Once we teach students a pattern of logic, we want and expect them to apply it to new circumstances. When they apply the logic of a simple demand curve or simple supply curve to the aggregate demand or aggregate supply curve, the logic does not fit. We believe the best way to teach the reasoning embodied in the aggregate demand and aggregate supply curves without creating serious confusion is to build up to them carefully.

**Organization** As in the fourth edition, the macroeconomics section begins with three introductory chapters (21–23) that introduce students to macroeconomic tools, national income accounting, and inflation and unemployment (both in the United States and abroad). These chapters are followed by two chapters that present the basic functioning of the goods market (chapters 24 and 25) and two chapters that present the basic functioning of the money market (chapters 26 and 27). It is these four chapters that students are introduced to the concepts of fiscal and monetary policy. These chapters are followed by a chapter that brings the two markets together. This chapter, chapter 28, does in essence a very simplified version of *IS/LM* analysis verbally. (The *IS* and *LM* curves are included in an appendix to chapter 28 for those instructors who are interested in teaching them.)

Given the groundwork that has been laid in chapter 28, chapter 29 proceeds directly to derive the aggregate demand curve and then the aggregate supply curve. The two curves are then put together to determine the aggregate price level and to discuss the various theories of inflation.

Following the development of the *AD* and *AS* curves, we turn to a more detailed look at the labor market in chapter 30 and discuss various theories of unemployment. By the end of chapter 30, students have put the goods market, the money market, and the labor market together, and they have analyzed inflation, unemployment, and monetary and fiscal policy. Chapter 31 uses the material learned earlier to analyze a number of current macroeconomic issues, including proposed balanced-budget legislation and business cycles in Europe and Asia.

In chapter 32, we take a closer look at the behavior of households and firms in the macroeconomy. It can be

skipped without losing the flow of the material. We close the macro section of the book by looking at some current debates in macroeconomics (chapter 33) and economic growth and productivity (chapter 34).

**Content** In preparing the fifth edition, we have maintained the two innovations we introduced in the second edition. The first of these is the treatment of aggregate supply. Clearly, there is strong disagreement among economists and across economics textbooks on the exact nature of the aggregate supply curve. All economists agree that if input prices rise at the same rate as output prices, the aggregate supply curve is vertical; firms have no incentive to change output if their costs and revenues change at the same rate. For the AS curve to have a positive slope in the short run, input prices must either be constant or there must be some lag in their adjustment.

Some textbooks assume that input prices are constant when the overall price level changes, essentially treating the aggregate supply curve as if it were the sum of individual market supply curves. This assumption of constant input prices is obviously unrealistic, and in the second edition we changed our description of the short-run AS curve to one that assumes some lag in input price adjustment when the overall price level changes. In addition, we clarified and expanded our description of the long-run aggregate supply curve, incorporating the concept of potential GDP.

Second, we continue to distinguish between inflation (a change in the overall price level) and *sustained* inflation (an increase in the overall price level that continues for some period of time). There can be confusion in students' minds as to what inflation is and whether or not it is a purely monetary phenomenon, and we think that this distinction helps to clarify our discussions.

## HIGHLIGHTS OF THE FIFTH EDITION

### NEW FAST FACTS IN EVERY CHAPTER

An important new feature of the fifth edition is that several Fast Facts have been added to every chapter. Each is either a new table of data, an additional example, a research result, or simply an illustration of a point made in the text. Although brief and not as involved as a box, we believe these will add depth and richness to the material. As an example, in the discussion of elasticity, we obtained some current estimates of price elasticity of demand for a number of common goods from Regional Financial Associates, a first-rate forecasting and modelling firm in Philadelphia.

Other examples include a brief discussion of the Three Gorges Dam under construction in China, the current U.S.-dollar exchange rates against several currencies, and a table showing the cumulative effects of alternative growth rates over 10- and 20-year time periods.

### RECENT DATA, EXAMPLES, EVENTS, AND TOPICS

Every chart, table, and graph in the book has been revised with the most recent data available. In addition, we have integrated topics that have generated a great deal of attention over the last few years—the economics of crime, immigration and health care, the Justice Department's assault on Microsoft, the recent experiences of Russia and the economies of Eastern Europe, the continuing economic problems of Asia, the adoption of a common currency in Europe, the debate about shifting to a consumption tax, and the decline of the "natural monopolies" and consequent deregulation of electricity rates, to name just a few.

### THE BEA'S NEW PROCEDURE

The Bureau of Economic Analysis (BEA) make a major change at the end of 1995 in its presentation of the national income and product accounts. The focus is no longer on constant-dollar magnitudes and on implicit price deflators, but instead on "chain-type annual weights" quantity and price indexes. This change is much more important than the BEA's change in focus a few years ago from GNP to GDP.

Unfortunately, our enthusiasm to get the description of the new and complex chain index into the fourth edition led us to pitch the discussion too high. We heard from many students and instructors that the presentation was too hard. Therefore, we have completely rewritten that section and lowered the level of the discussion. The topic remains a difficult one for students to understand, however, and some may wish to skip it altogether.

### INCREASED COVERAGE OF INTERNATIONAL MATERIAL

We have increased our coverage of international material in three ways. First, we have added many new Global Perspective boxes throughout the text. These boxes are designed to illustrate economic logic with global examples and to emphasize today's global economy. Second, we introduce imports and exports into the simple goods market model early in macroeconomics. (We do, however, continue to believe that a complete treatment of open market macroeconomics should not be taught until students have mastered the logic of a simple closed macroeconomy. For this reason, we have chosen to place the "open-economy

macro” chapter in International Economics, the final section of the book.) Finally, we have integrated international examples directly into the text whenever appropriate. All international examples are listed in a table following the book’s detailed table of contents.

## OPTIONAL CHAPTERS

We have tried to keep uppermost in our minds that time is always tight in a principles course. For this reason, we have made sure that certain chapters can be skipped without losing the flow of the material. In microeconomics, chapter 11 (on the capital market) can be skipped because chapter 10 (on input markets in general) covers the basics of the capital market. Similarly, the “topics” chapters in Part Four can be skipped if time is short.

In macroeconomics, chapters 32–34 are optional. The chapters in the international section, with the exception of chapter 36, can be taught at any time that the instructor deems appropriate.

## STUDENT LEARNING AIDS

Each chapter begins with a brief overview of what the student has learned in the previous chapter and ends with a brief “look ahead” to the following chapter. To help students study, key terms have been printed in boldface and glossed to the margins. Each chapter ends with a point-by-point summary of the chapter, a list of review terms and concepts (cross-referenced to text page), and a problem set.

Because many believe that economics must be relevant to be interesting, we have included three types of boxes for the fifth edition. Global Perspective boxes provide economic examples from around the world. Application boxes apply the theory learned in the text to real-world events and situations. Issues and Debates boxes examine many of the economic issues currently under debate.

In addition, we have set the major principles of economics off from the text in such a way as to highlight their importance. These highlights flow logically from the preceding text and into the text that follows. Students tell us that they find these very useful as a way of reviewing the key points in each chapter to prepare for exams.

## PROBLEM SETS AND SOLUTIONS

Each chapter and appendix ends with a problem set that asks students to think about what they’ve learned in the chapter. These problems are not simple memorization questions. Rather, they ask students to perform graphical analysis or to apply economics to a real-world situation or policy decision. Approximately 40 percent of the problems are new to this edition. More challenging problems are

indicated by an asterisk. The solutions to all even-numbered problems appear at the back of the book. The solutions to all odd-numbered problems, as well as additional problem sets, are available in the Instructor’s Resource Manual.

## CASE STUDIES

The end-of-part case studies continue to be quite popular. The fifth edition features nine new case studies on topics ranging from the spotted owl and new homes to making your own money.

Each case study is accompanied by questions for analytical thinking. The cases are not simply additional problems, and they are not simple extensions of the text material. They are meant to be applications of some of the *ideas* that the part was designed to teach and are designed to foster critical thinking and “thinking like an economist.” They might be used as assignments or for class discussion.

## TEACHING AND LEARNING TOOLS

The ancillary package for the fifth edition reflects changes in technology and utilizes new ways of disseminating information. A customized Web site links with Prentice Hall Learning on the Internet Partnership (PHLIP) to offer a comprehensive Internet package for the student and the instructor. An integrated package of software, printed supplements, videos, and reference guides completes the total teaching and learning package. Please contact your Prentice Hall sales representative for information on any of the Case and Fair supplements.

## INTERNET RESOURCES (WWW.PRENHALL.COM/CASEFAIR)

The Case and Fair Web site offers students another opportunity to sharpen their problem-solving skills and to assess their understanding of the text material. Just go to the Case and Fair site and click on the Online Study Guide for additional true/false, multiple-choice, fill-in-the-blanks, and essay questions. The site also connects the student to the Take It to the Net web-destination exercises cited at the end of each chapter in the text. The online study guide has a built-in grading feature; students take the exams and receive immediate feedback.

From the Case and Fair Web site, the student and the instructor can link to PHLIP. Developed by Dan Cooper at Marist College, PHLIP provides academic support for faculty and students using the fifth edition. The student section of PHLIP offers some downloadable supplements as well as PHLIPing through the News, a review of current-events articles keyed to topics in the text. Scott Simkins (North Carolina A&T State University) and Jim Barbour (Elon



College) update the articles biweekly and provide summaries with discussion questions and research ideas. The faculty section of PHLIP requires a user name and password—please contact your Prentice Hall sales representative.

## ECONOMICS EXPLORER RUNTIME MULTIMEDIA

The *Economics Explorer* CD-ROM, developed by Prentice Hall and Logal Software, Inc., combines video, animation, and spreadsheet capabilities to bring economics to life. Logal has taken the basic economic models from the textbook and created a series of dynamic, interactive simulations that help students visualize how math, graphs, and economic intuition are connected.

Once students have learned to use the simulation, they can design their own experiments and test their own conjectures. Using *Economics Explorer*, students can test the limits of economic models, input their own data to recreate events from economic history, and (using spreadsheet capabilities) record the results and display them in graphs like those from their textbook.

The fifth edition Instructor's Manual provides tips for integrating *Economics Explorer* into the course. The Study Guide alerts the students to relevant exercises tied to topics in the text.

## STUDY GUIDES

Two comprehensive study guides, one for microeconomics and one for macroeconomics, have been prepared by Thomas Beveridge of North Carolina State University. These study aids reinforce the textbook and provide students with additional applications and exercises. Each chapter contains the following elements:

- **Point-by-Point Objectives.** A list of learning goals for the chapter, along with a brief summary of the material, helpful study hints, practice questions with solutions, and page references to the text.
- **Practice Tests.** Approximately 20 multiple-choice questions and their answers.
- **Application Questions.** A series of multiple-choice questions that require the use of graphic or numerical analysis to solve economic problems.
- **Solutions.** Worked-out solutions to all questions in the Study Guide, complete with page references to the text.
- **Comprehensive Part Exams.** Nine part exams to test the students' overall comprehension consisting of up to 25 multiple-choice questions, extended examples, and problem questions where appropriate.

The study Guide also references the Take It to the Net Web exercises from the text and alerts the student to relevant applications in the *Economics Explorer* software.

## INSTRUCTOR'S MANUALS

Two innovative instructor's manuals, *Principles of Microeconomics* and *Principles of Macroeconomics*, were written by Mary Lesser at Iona College. The manuals are designed to help the instructor incorporate applicable elements of the fifth edition supplement package. The manuals include:

- Detailed chapter outlines with key terminology, teaching notes, and lecture suggestions.
- Video Guide for the 1998/99 Economics Video Library.
- Class Tips from Students, which feature real-world ideas from the students' point of view.
- Teaching Tips on incorporating the Take It to the Net Web exercises and *Economics Explorer* software.
- Additional Problems with solutions.
- Extended Applications, which include exercises, activities, and experiments to help make economics relevant to students.
- Solutions to all odd-numbered problems from the text.
- Case Study Solutions for the analytical thinking questions that accompany cases from the fifth edition text.

## TEST ITEM FILES

The fifth edition test bank, completely revised and updated by Timothy Duy of the University of Oregon, contains almost 7,000 true/false, multiple-choice, short-answer, and essay questions. Also included are Problem Sets, a series of questions based on a scenario or graph. Each question in the test bank is page-referenced and coded for level of difficulty (easy, moderate, challenging, and honors). Questions are also classified as fact, definition, single, and multi. Questions classified as single require the student to use a single-step analytical process to answer, whereas the questions classified as multi require the student to perform numerous steps in the analytical process.

A test item file is available for both microeconomics and macroeconomics, in printed form or in a computerized version.

## PH CUSTOM TESTS

Available for Windows and Macintosh, PH Custom is the computerized version of the test item files. The test program allows professors to edit, add or delete questions from the test item file, edit existing graphics and create new graphics, and export files to word processing programs.



## POWERPOINT LECTURE PRESENTATION

An all-new PowerPoint presentation, by Mark Karscig of Central Missouri State University, offers summaries and necessary reinforcement of important text material. Many important graphs “build” over a sequencing of slides so that students may see the step-by-step process involved in economic analysis. The package will allow for instructors to make full-color, professional-looking presentations while providing the ability for custom handouts to be provided to the students.

## COLOR TRANSPARENCIES

All figures and tables from the text are reproduced as full-page, four-color acetates.

## ABC NEWS/PRENTICE HALL VIDEO LIBRARY

ABC News and Prentice Hall combine their individual expertise in academic publishing and global reporting to provide a comprehensive video ancillary to the fifth edition. The 1998/99 Economics Video Library contains 23 news clips from *Nightline*, *World News Tonight*, *Wall Street Journal Report*, and *20/20*. Each clip illustrates the vital, ongoing connections between what is learned in the classroom and what is happening in the world around us. All the videos are timely or timeless, and many can be used at different points in the course. The instructor's manuals provide suggestions on where and how to integrate each video.

## ABCNEWS

## THE NEW YORK TIMES “THEMES OF THE TIMES”

The New York Times, Inc., and Prentice Hall collaborate to offer *Economic Themes of the Times*—12 newspaper pages full of current articles on public policy, business, finance and other issues that expose the real-world, everyday relevance of economics. “*Themes of the Times*” is available for both Spring and Fall quarters.

*The New York Times* offers a reduced subscription rate for students and professors. For more information, call 1-800-631-1222.



## SURFING FOR SUCCESS INTERNET GUIDE

Surfing for Success in Economics 1998/99 is an invaluable guide on using Internet resources. Scott Simkins and Jim Barbour join Andrew Stull in creating a reference that not only helps beginning students learn their way around the

Internet, but lists economics-related sites and Your Turn Web-destination exercises to make surfing the Internet a natural part of the economics classroom.

## THE SECOND YEAR SUPPLEMENT PACKAGE

A new wave of supplements will be available to help the instructor in the second year of using the fifth edition textbook:

- A brand new Test Item File, written by Mary Lesser, Iona College.
- 1999/2000 Economics Video Library and Video Guide.
- Presentation Manager.

## ACKNOWLEDGMENTS

We are grateful to many people for help on the fifth edition. We are most grateful to Mike Elia, Senior Developmental Editor for Business Publishing at Prentice Hall, for stepping in to oversee the entire project. The quality of the book owes much to his guidance, and we owe much to his good humor. Gladys Soto, Assistant Editor, indefatigably marshalled the extensive array of supplements to accompany this text. We also owe much to Rod Banister, Executive Editor for Economics at Prentice Hall, for his help and enthusiasm.

We are also indebted to Elena Rangelova, David Lindauer, Jack Triplett of the BEA, and Susan Skeath. We want to thank Peter Scott and Elizabeth Gill for their research assistance and proofreading of the manuscript.

We also owe a debt of gratitude to those who reviewed the fifth edition and provided us with a valuable insight as we prepared the new edition:

- Alex Anas, SUNY at Buffalo
- Charles A. Bennett, Gannon University
- Minh Quang Dao, Eastern Illinois University
- Douglas A. Greenley, Moorhead State University
- Cynthia S. McCarty, Jacksonville State University
- James J. McLain, University of New Orleans
- Martha L. Olney, University of California-Berkeley
- Ben Young, University of Missouri-Kansas City
- Darrel Young, University of Texas

We are extremely indebted to James Shope and Michael Krause for reviewing the entire manuscript for this revision.

Last but not least, the following individuals were of immense help in reviewing all or part of this book and the teaching/learning package in various stages of development:

Lew Abernathy, University of North Texas • Jack Adams, University of Maryland • Douglas Agbetsiafa, Indiana University at

South Bend • Sam Alapati, Rutgers University • Polly Allen, University of Connecticut • Stuart Allen, University of North Carolina at Greensboro • Jim Angresano, Hampton-Sydney College • Kenneth S. Arakelian, University of Rhode Island • Harvey Arnold, Indian River Community College • Nick Apergis, Fordham University • Kidane Asmeron, Pennsylvania State University • James Aylesworth, Lakeland Community College • Kari Battaglia, University of North Texas • Daniel K. Benjamin, Clemson University • Bruce Bolnick, Northeastern University • G. E. Breger, University of South Carolina • Dennis Brennan, William Rainey Harper Junior College • Lindsay Caulkins, John Carroll University • Atreya Chakraborty, Boston College • Harold Christensen, Centenary College • Daniel Christiansen, Albion College • Samuel Kim-Liang Chuah, Walla Walla College • David Colander, Middlebury College • Daniel Condon, University of Illinois at Chicago; Moraine Valley Community College • David Cowen, University of Texas at Austin • Michael Donihue, Colby College • Robert Driskill, Ohio State University • Gary Dymski, University of Southern California • Jay Egger, Towson State University • Noel J. J. Farley, Bryn Mawr College • Mosin Farminesh, Temple University • Dan Feaster, Miami University of Ohio • Susan Feiner, Virginia Commonwealth University • Getachew Felleke, Albright College • Lois Fenske, South Puget Sound Community College • William Field, DePauw University • Bill Foeller, State University of New York at Fredonia • Roger Nils Folsom, San Jose State University • Sean Fraley, College of Mount Saint Joseph • N. Galloro, Chabot College • Tom Gausman, Northern Illinois University, DeKalb • Shirley J. Gedeon, University of Vermont • Gary Gigliotti, Rutgers University • Lynn Gillette, Texas A&M University • Sarah L. Glavin, Boston College • Devra Golbe, Hunter College • Roger Goldberg, Ohio Northern University • Douglas Greenley, Morrhead State University • Lisa M. Grobar, California State University at Long Beach • Benjamin Gutierrez, Indiana University at Bloomington • A. R. Gutowsky, California State University at Sacramento • David R. Hakes, University of Missouri at St. Louis • Stephen Happel, Arizona State University • Mitchell Harwitz, State University of New York at Buffalo • David Hoas, Centenary College • Harry Holzer, Michigan State University • Bobbie Horn, University of Tulsa • John Horowitz, Ball State University • Janet Hunt, University of Georgia • Fred Inaba, Washington State University • Richard Inman, Boston College • Shirley Johnson, Vassar College • Farhoud Kafi, Babson College • R. Kallen, Roosevelt University • Arthur E. Kartman, San Diego State University • Hirshel Kasper, Oberlin College • Bruce Kaufman, Georgia State University • Dominique Khactu, The University of North Dakota • Phillip King, San Francisco State University • Barbara Kneeshaw, Wayne County Community College • Barry Kotlove, Elmira College • David Kraybill, University of Georgia at Athens • Rosung Kwak, University of Texas at Austin • Melissa Lam, Wellesley College • Jim Lee, Fort Hays State University • Judy Lee, Leeward Community College • Gary Lemon, DePauw University • Alan Leonard, Northern Illinois University • George Lieu, Tuskegee University • Stephen E. Lile, Western Kentucky University • Jane Lillydahl, University of Colorado at Boulder • Al Link, University of North Carolina at Greensboro • Robert Litro, U. S. Air Force Academy, Wallingford, CT • Burl F. Long, University of Florida • Gerald Lynch, Purdue University • Karla Lynch, University of North Texas • Michael Magura, University of Toledo • Don

Maxwell, Central State University • Nan Maxwell, California State University at Hayward • J. Harold McClure, Jr., Villanova University • Rick McIntyre, University of Rhode Island • K. Mehtaboin, College of St. Rose • Shahruz Mohtadi, Suffolk University • Joe L. Moore, Arkansas Technical University • Robert Moore, Occidental College • Doug Morgan, University of California at Santa Barbara • Norma C. Morgan, Curry College • John Murphy, North Shore Community College, Massachusetts • Veena Nayak, State University of New York at Buffalo • Randy Nelson, Colby College • David Nickerson, University of British Columbia • Rachel Nugent, Pacific Lutheran University • Akorlie A. Nyatepe-Coo, University of Wisconsin at LaCrosse • Norman P. Obst, Michigan State University • William C. O'Connor, Western Montana College • Kent Olson, Oklahoma State University • Carl Parker, Fort Hays State University • Spirog Patton, Neumann College • Tony Pizelo, Spokane Community College • Michael Rendich, Westchester Community College • Lynn Rittenoure, University of Tulsa • David C. Rose, University of Missouri at St. Louis • Richard Rosenberg, Pennsylvania State University • Mark Rush, University of Florida at Gainesville • Dereka Rushbrook, Ripon College • David L. Schaffer, Haverford College • Gary Sellers, University of Akron • Jean Shackelford, Bucknell University • Linda Shaffer, California State University at Fresno • Geoff Shepherd, University of Massachusetts at Amherst • Bih-Hay Sheu, University of Texas at Austin • Alden Shiers, California Polytechnic State University • Sue Skeath, Wellesley College • Paula Smith, Central State University, Oklahoma • John Solow, University of Iowa at Iowa City • Susan Stojanovic, Washington University, St. Louis • Ernst W. Stromsdorfer, Washington State University • Michael Taussig, Rutgers University • Timothy Taylor, Stanford University • Sister Beth Anne Tercek, SND, Notre Dame College of Ohio • Jack Trierweler, Northern State University • Brian M. Trinke, University of Texas at Austin • Ann Velenchik, Wellesley College • Chris Waller, Indiana University at Bloomington • Walter Wessels, North Carolina State University • Joan Whalen-Ayyappan, DeVry Institute of Technology • Robert Whaples, Wake Forest University • Leonard A. White, University of Arkansas • Abera Zeyege, Ball State University • James Ziliak, Indiana University at Bloomington

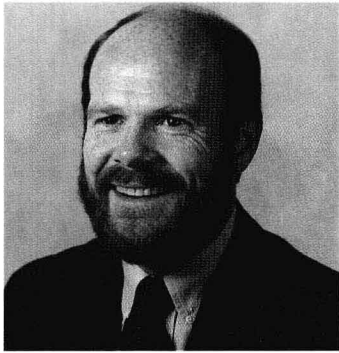
We welcome comments about the fifth edition. Please write to us care of Economics Editor, Prentice Hall Higher Education Division, One Lake Street, Upper Saddle River, N.J. 07458.

Karl E. Case  
Ray C. Fair

### Save a Tree!

Many of the components of the teaching and learning package are available in electronic format. Disk-based supplements conserve paper and allow you to select and print only the material you plan to use. For more information, please ask your Prentice Hall sales representative.

# ABOUT THE AUTHORS



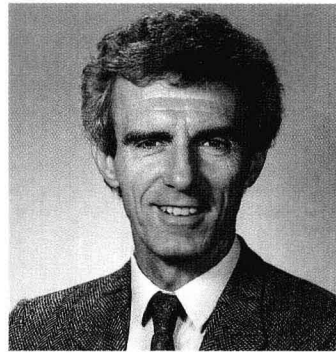
## **Karl E. Case**

is the Marion Butler McLean Professor in the History of Ideas and Professor of Economics at Wellesley College. He also lectures on economics and tax policy in the International Tax Program at Harvard Law School and is a visiting scholar at the Federal Reserve Bank of

Boston. He received his B.A. from Miami University in 1968, spent 3 years in the army, and received his M.A. and Ph.D. from Harvard University. In 1980 and 1981, he was Fellow in Law and Economics at Harvard Law School.

Professor Case's research has been in the areas of public finance, taxation, and housing. He is the author or coauthor of four other books, including *Economics and Tax Policy* and *Property Taxation: The Need for Reform*, as well as numerous articles in professional journals.

For the past 21 years, he has taught at Wellesley College. Before coming to Wellesley, he served as Head Tutor (director of undergraduate studies) at Harvard, where he won the Allyn Young Teaching Prize. He has been a member of the AEA's Committee on Economic Education and was Associate Editor of the *Journal of Economic Education*, responsible for the section on innovations in teaching. He teaches at least one section of the principles course every year.



## **Ray C. Fair**

is Professor of Economics at Yale University. He is a member of the Cowles Foundation at Yale and a Fellow of the Econometric Society. He received a B.A. in economics from Fresno State College in 1964 and a Ph.D. in economics from M.I.T. in 1968. He taught at Princeton University

from 1968 to 1974 and has been at Yale since 1974.

Professor Fair's research has primarily been in the areas of macroeconomics and econometrics, with particular emphasis on macroeconometric model building. His publications include *Specification, Estimation, and Analysis of Macroeconometric Models* (Harvard Press, 1984) and *Testing Macroeconometric Models* (Harvard Press, 1994).

Professor Fair has taught introductory and intermediate economics at Yale. He has also taught graduate courses in macroeconomic theory and macroeconometrics.

Professor Fair's United States and multicountry models are available for use on the Internet free of charge. The address is <http://fairmodel.econ.yale.edu>. Many teachers have found that having students work with the United States model on the Internet is a useful complement to even an introductory macroeconomics course.



# BRIEF CONTENTS

---

## INTRODUCTION

---

### PART 1: Introduction to Economics 1

1. The Scope and Method of Economics 1
2. The Economic Problem: Scarcity and Choice 25
3. The Structure of the U.S. Economy: The Private, Public, and International Sectors 45
4. Demand, Supply, and Market Equilibrium 67
5. The Price System, Supply and Demand, and Elasticity 97

---

## MICROECONOMICS

---

### PART 2: Foundations of Microeconomics: Consumers and Firms 127

6. Household Behavior and Consumer Choice 127
7. The Production Process: The Behavior of Profit-Maximizing Firms 159
8. Short-Run Costs and Output Decisions 183
9. Costs and Output Decisions in the Long Run 207
10. Input Demand: The Labor and Land Markets 233
11. Input Demand: The Capital Market and the Investment Decision 253
12. General Equilibrium and the Efficiency of Perfect Competition 273

### PART 3: Market Imperfections and the Role of Government 297

13. Monopoly 297
14. Monopolistic Competition and Oligopoly 323
15. Antitrust Policy and Regulation 347
16. Externalities, Public Goods, Imperfect Information, and Social Choice 373
17. Income Distribution and Poverty 403

### PART 4: Current Microeconomic Issues 429

18. Public Finance: The Economics of Taxation 429
19. The Economics of Labor Markets and Labor Unions 451
20. Current Topics in Applied Microeconomics: Health Care, Immigration, and Urban Problems 475

---

## MACROECONOMICS

---

### PART 5: Concepts and Problems in Macroeconomics 497

21. Introduction to Macroeconomics 497
22. Measuring National Output and National Income 517
23. Macroeconomic Concerns: Unemployment, Inflation, and Growth 539

### PART 6: Macroeconomic Principles and Policy 559

24. Aggregate Expenditure and Equilibrium Output 559
25. The Government and Fiscal Policy 583
26. The Money Supply and the Federal Reserve System 609
27. Money Demand, the Equilibrium Interest Rate, and Monetary Policy 635

### PART 7: Macroeconomic Analysis and Issues 657

28. Money, the Interest Rate, and Output: Analysis and Policy 657
29. Aggregate Demand, Aggregate Supply, and Inflation 675
30. The Labor Market, Unemployment, and Inflation 701
31. Deficit Reduction, Fed Behavior, Stabilization, Stock Market Effects, and Macro Issues Abroad 721
32. Household and Firm Behavior in the Macroeconomy 741

**PART 8: Debates in Macroeconomics  
and Economic Growth 769**

- 33.** Debates in Macroeconomics: Monetarism, New  
Classical Theory, and Supply-Side Economics 769
- 34.** Economic Growth and Productivity 787

---

**INTERNATIONAL ECONOMICS**

---

**PART 9: The Global Economy 811**

- 35.** International Trade, Comparative Advantage,  
and Protectionism 811

- 36.** Open-Economy Macroeconomics: The Balance  
of Payments and Exchange Rates 833

- 37.** Economic Growth in Developing Nations 865

- 38.** Economies in Transition and Alternative  
Economic Systems 887

**CONCISE DICTIONARY OF ECONOMIC  
TERMINOLOGY D-1**

**SOLUTIONS TO EVEN-NUMBERED PROBLEMS S-1**

**INDEX I-1**

# C CONTENTS

---

## INTRODUCTION

---

### PART 1: Introduction to Economics 1

#### 1 The Scope and Method of Economics 1

WHY STUDY ECONOMICS? 2

To Learn a Way of Thinking 2

To Understand Society 4

To Understand Global Affairs 5

To Be an Informed Voter 6

THE SCOPE OF ECONOMICS 6

Microeconomics and Macroeconomics 7

The Diverse Fields of Economics 8

THE METHOD OF ECONOMICS 8

*APPLICATION: The Fields of Economics 9*

Theories and Models 10

Economic Policy 13

AN INVITATION 15

SUMMARY 16

REVIEW TERMS AND CONCEPTS 16

PROBLEM SET 16

APPENDIX: How to Read and Understand Graphs 18

#### 2 The Economic Problem: Scarcity and Choice 25

SCARCITY, CHOICE, AND OPPORTUNITY

COST 26

The Three Basic Questions 26

The Production Possibility Frontier 31

The Economic Problem 36

ECONOMIC SYSTEMS 37

Command Economies 37

Laissez-Faire Economies: The Free Market 38

*GLOBAL PERSPECTIVE: Eastern Europe and Russia:  
A Mixed Progress Report 39*

Mixed Systems, Markets, and Governments 40

LOOKING AHEAD 41

SUMMARY 41

REVIEW TERMS AND CONCEPTS 42

PROBLEM SET 42

#### 3 The Structure of the U.S. Economy: The Private, Public, and International Sectors 45

THE PRIVATE SECTOR: U.S. BUSINESS AND  
INDUSTRIAL ORGANIZATION 46

The Legal Organization of Firms 46

The Organization of Industries 48

How Competitive Is the U.S. Economy? 52

Structural Change Since 1970 53

*APPLICATION: The Changing Mix of Jobs  
in the United States 55*

THE PUBLIC SECTOR: TAXES  
AND GOVERNMENT SPENDING 55

The Size of the Public Sector 55

Government Expenditures 58

Sources of Government Revenue 59

THE INTERNATIONAL SECTOR:

IMPORTS AND EXPORTS 61

FROM INSTITUTIONS TO THEORY 63

SUMMARY 64

REVIEW TERMS AND CONCEPTS 65

PROBLEM SET 65

#### 4 Demand, Supply, and Market Equilibrium 67

FIRMS AND HOUSEHOLDS: THE BASIC  
DECISION-MAKING UNITS 68

INPUT MARKETS AND OUTPUT MARKETS:  
THE CIRCULAR FLOW 69

DEMAND IN PRODUCT/OUTPUT MARKETS 70

Price and Quantity Demanded: The Law  
of Demand 71

Other Determinants of Household Demand 74

Shift of Demand versus Movement Along  
a Demand Curve 76

From Household Demand to Market Demand 79

SUPPLY IN PRODUCT/OUTPUT MARKETS 80

Price and Quantity Supplied: The Law  
of Supply 80

Other Determinants of Firm Supply 82

Shift of Supply versus Movement Along a  
Supply Curve 83

From Individual Firm Supply to Market Supply 84



MARKET EQUILIBRIUM 85

Excess Demand 86

Excess Supply 88

Changes in Equilibrium 89

DEMAND AND SUPPLY IN PRODUCT MARKETS:  
A REVIEW 90

*APPLICATION: Supply and Demand  
in the News 92*

LOOKING AHEAD: MARKETS  
AND THE ALLOCATION OF RESOURCES 93

SUMMARY 94

REVIEW TERMS AND CONCEPTS 95

PROBLEM SET 95

## 5 The Price System, Supply and Demand, and Elasticity 97

THE PRICE SYSTEM: RATIONING  
AND ALLOCATING RESOURCES 97

Price Rationing 97

Constraints on the Market and Alternative Rationing  
Mechanisms 99

*GLOBAL PERSPECTIVE: The Market Comes  
to China 100*

Prices and the Allocation of Resources 103

SUPPLY AND DEMAND ANALYSIS:  
AN OIL IMPORT FEE 105

ELASTICITY 106

*ISSUES AND DEBATES: Traffic Congestion  
and Organ Donations 107*

Price Elasticity of Demand 108

Calculating Elasticities 111

The Determinants of Demand Elasticity 117

*APPLICATION: London Newspapers  
and New York Restaurants Learn  
About Elasticity 118*

Other Important Elasticities 119

LOOKING AHEAD 120

SUMMARY 120

REVIEW TERMS AND CONCEPTS 121

PROBLEM SET 121

CASE STUDY: The Spotted Owl, the Lumber  
Industry, and the Market for New Homes 124

---

## MICROECONOMICS

---

### PART 2: Foundations of Microeconomics: Consumers and Firms 127

## 6 Household Behavior and Consumer Choice 127

HOUSEHOLD CHOICE IN OUTPUT MARKETS 129

The Determinants of Household Demand 129

The Budget Constraint 130

*APPLICATION: Opportunity Costs—  
Then and Now 133*

THE BASIS OF CHOICE: UTILITY 135

Diminishing Marginal Utility 135

Allocating Income to Maximize Utility 137

The Utility-Maximizing Rule 138

Diminishing Marginal Utility and Downward-Sloping  
Demand 139

INCOME AND SUBSTITUTION EFFECTS 139

The Income Effect 140

The Substitution Effect 140

CONSUMER SURPLUS 142

*APPLICATION: The Tax Laws and the Income  
and Substitution Effects 143*

HOUSEHOLD CHOICE IN INPUT MARKETS 144

The Labor Supply Decision 145

The Price of Leisure 145

Income and Substitution Effects  
of a Wage Change 146

Saving and Borrowing: Present versus  
Future Consumption 147

A REVIEW: HOUSEHOLDS IN OUTPUT  
AND INPUT MARKETS 148

SUMMARY 149

REVIEW TERMS AND CONCEPTS 150

PROBLEM SET 150

APPENDIX: Indifference Curves 153

## 7 The Production Process: The Behavior of Profit-Maximizing Firms 159

THE BEHAVIOR OF PROFIT-MAXIMIZING FIRMS 162

Profits and Economic Costs 163

Short-Run versus Long-Run Decisions 165

The Bases of Decisions: Market Price of Output,  
Available Technology, and Input Prices 166

THE PRODUCTION PROCESS 166

Production Functions: Total Product, Marginal Product, and Average Product 167  
Production Functions with Two Variable Factors of Production 171

CHOICE OF TECHNOLOGY 171

*GLOBAL PERSPECTIVE: Production Technologies: Robots in the United States, Skyscrapers in Asia* 172

SUMMARY 174

REVIEW TERMS AND CONCEPTS 174

PROBLEM SET 175

APPENDIX: Isoquants and Isocosts 177

## **8 Short-Run Costs and Output Decisions 183**

COSTS IN THE SHORT RUN 184

Fixed Costs 184

Variable Costs 185

Total Costs 193

Short-Run Costs: A Review 195

OUTPUT DECISIONS: REVENUES, COSTS, AND PROFIT MAXIMIZATION 195

Total Revenue (TR) and Marginal Revenue (MR) 196

Comparing Costs and Revenues to Maximize Profit 197

*APPLICATION: Case Study in Marginal Analysis: An Ice Cream Parlor* 200

The Short-Run Supply Curve 200

LOOKING AHEAD 202

SUMMARY 203

REVIEW TERMS AND CONCEPTS 204

PROBLEM SET 204

## **9 Costs and Output Decisions in the Long Run 207**

SHORT-RUN CONDITIONS AND LONG-RUN DIRECTIONS 208

Maximizing Profits 208

Minimizing Losses 210

The Short-Run Industry Supply Curve 213

Long-Run Directions: A Review 214

LONG-RUN COSTS: ECONOMIES AND DISECONOMIES OF SCALE 215

Increasing Returns to Scale 216

*APPLICATION: Why Small Farmers Have Trouble Competing: Economies of Scale in Agriculture and Hog Raising* 218

Constant Returns to Scale 219

Decreasing Returns to Scale 219

LONG-RUN ADJUSTMENTS TO SHORT-RUN CONDITIONS 220

Short-Run Profits: Expansion to Equilibrium 221

Short-Run Losses: Contraction to Equilibrium 222

The Long-Run Adjustment Mechanism:

Investment Flows toward Profit

Opportunities 223

OUTPUT MARKETS: A FINAL WORD 224

*ISSUES AND DEBATES: The Long-Run Average Cost Curve: Flat or U-Shaped?* 225

SUMMARY 226

REVIEW TERMS AND CONCEPTS 227

PROBLEM SET 227

APPENDIX: External Economies and Diseconomies and the Long-Run Industry Supply Curve 229

## **10 Input Demand: The Labor and Land Markets 233**

INPUT MARKETS: BASIC CONCEPTS 233

LABOR MARKETS 236

A Firm Using Only One Variable Factor of Production: Labor 236

*APPLICATION: Millionaire Baseball Players and Their Marginal Revenue Product* 241

A Firm Employing Two Variable Factors of Production in the Short and Long Run 242  
Many Labor Markets 243

LAND MARKETS 244

Rent and the Value of Output Produced on Land 245

THE FIRM'S PROFIT-MAXIMIZATION CONDITION IN INPUT MARKETS 246

INPUT DEMAND CURVES 247

Shifts in Factor Demand Curves 247

RESOURCE ALLOCATION AND THE MIX OF OUTPUT IN COMPETITIVE MARKETS 249

LOOKING AHEAD 249

SUMMARY 250

REVIEW TERMS AND CONCEPTS 250

PROBLEM SET 251

<b>11</b>	<b>Input Demand: The Capital Market and the Investment Decision</b>	<b>253</b>
	CAPITAL, INVESTMENT, AND DEPRECIATION	254
	Capital	254
	Investment and Depreciation	256
	THE CAPITAL MARKET	257
	Capital Income: Interest and Profits	258
	Financial Markets in Action	260
	Capital Accumulation and Allocation	261
	<i>GLOBAL PERSPECTIVE: Rural Credit in Bangladesh and Indonesia</i>	262
	THE DEMAND FOR NEW CAPITAL AND THE INVESTMENT DECISION	263
	Forming Expectations	263
	Comparing Costs and Expected Return	264
	A FINAL WORD ON CAPITAL	267
	SUMMARY	268
	REVIEW TERMS AND CONCEPTS	268
	PROBLEM SET	269
	APPENDIX: Calculating Present Value	270

<b>12</b>	<b>General Equilibrium and the Efficiency of Perfect Competition</b>	<b>273</b>
	GENERAL EQUILIBRIUM ANALYSIS	275
	A Technological Advance: The Electronic Calculator	275
	<i>GLOBAL PERSPECTIVE: Growth and Change in Global Markets</i>	276
	A Shift in Consumer Preferences: The Wine Industry in the 1970s	278
	Formal Proof of a General Competitive Equilibrium	281
	ALLOCATIVE EFFICIENCY AND COMPETITIVE EQUILIBRIUM	281
	Pareto Efficiency	282
	The Efficiency of Perfect Competition	283
	Perfect Competition versus Real Markets	286
	THE SOURCES OF MARKET FAILURE	287
	Imperfect Markets	287
	Public Goods	288
	Externalities	289
	Imperfect Information	290
	EVALUATING THE MARKET MECHANISM	290

SUMMARY	291
REVIEW TERMS AND CONCEPTS	292
PROBLEM SET	292
CASE STUDY: The Farming Industry in New England: Can It Survive?	294

## **PART 3: Market Imperfections and the Role of Government 297**

<b>13</b>	<b>Monopoly</b>	<b>297</b>
	IMPERFECT COMPETITION AND MARKET POWER: CORE CONCEPTS	297
	Defining Industry Boundaries	298
	Barriers to Entry	298
	<i>APPLICATION: Local Telephone Service in 1997: Still Pure Monopoly</i>	300
	Price: The Fourth Decision Variable	301
	PRICE AND OUTPUT DECISIONS IN PURE MONOPOLY MARKETS	302
	Demand in Monopoly Markets	302
	Perfect Competition and Monopoly Compared	309
	Collusion and Monopoly Compared	310
	THE SOCIAL COSTS OF MONOPOLY	311
	Inefficiency and Consumer Loss	311
	<i>APPLICATION: Rent-Seeking Behavior in the Italian Bread Market</i>	313
	Rent-Seeking Behavior	314
	Remedies for Monopoly	315
	NATURAL MONOPOLY	315
	Do Natural Monopolies Still Exist?	316
	MARKET POWER IN INPUT MARKETS: MONOPSONY	317
	IMPERFECT MARKETS: A REVIEW AND A LOOK AHEAD	319
	SUMMARY	319
	REVIEW TERMS AND CONCEPTS	320
	PROBLEM SET	321
<b>14</b>	<b>Monopolistic Competition and Oligopoly</b>	<b>323</b>
	MONOPOLISTIC COMPETITION	323
	Product Differentiation, Advertising, and Social Welfare	325
	Price and Output Determination in Monopolistic Competition	328