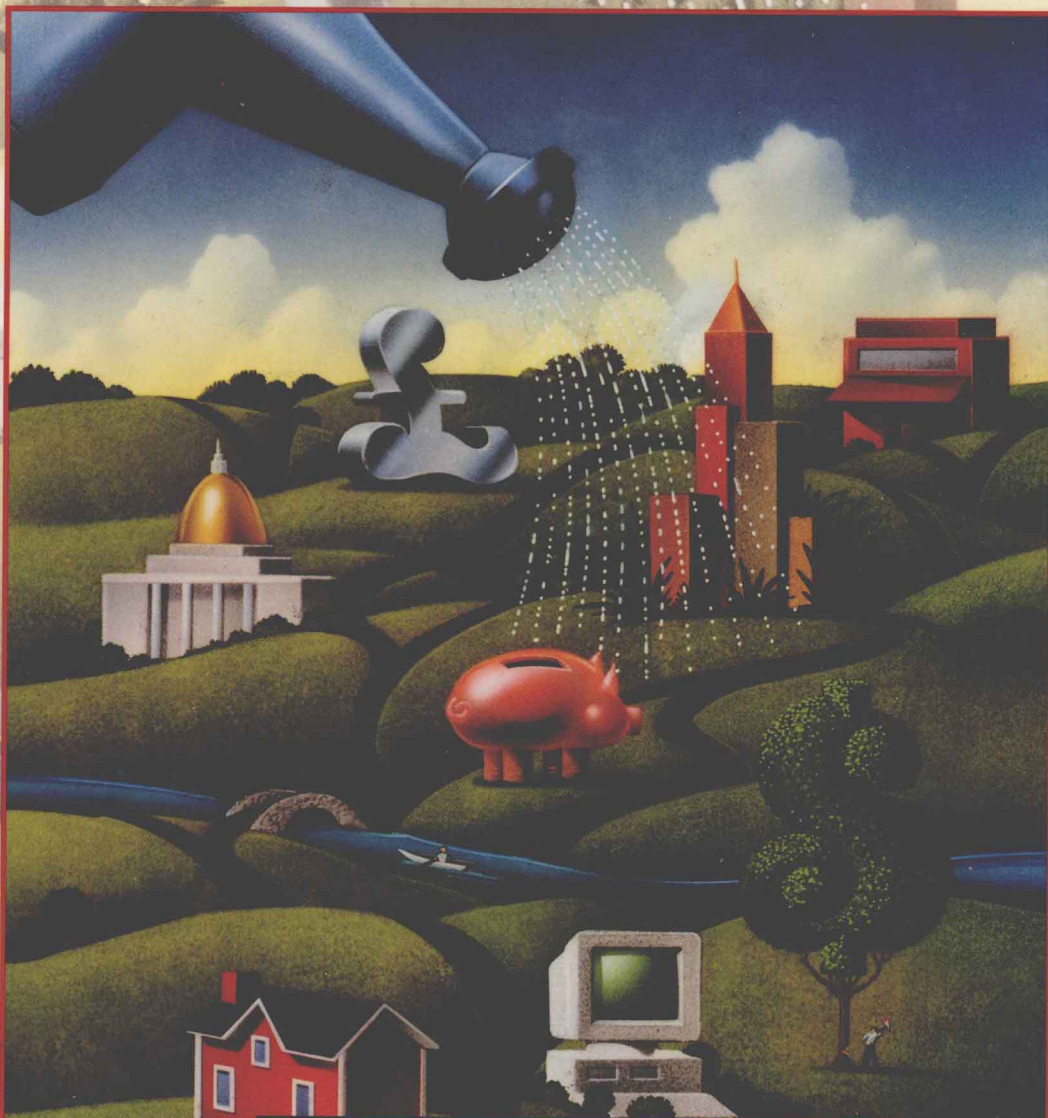


FOURTH EDITION

# PRINCIPLES OF ECONOMICS



CASE / FAIR

FOURTH EDITION

# PRINCIPLES OF ECONOMICS

*Karl E. Case*

WELLESLEY COLLEGE

*Ray C. Fair*

YALE UNIVERSITY



Prentice Hall, Inc., Upper Saddle River, New Jersey 07458

Library of Congress Cataloging in Publication Data

Case, Karl E.

Principles of economics/Karl E. Case, Ray C. Fair.— 4th ed.

1104 p. cm.

Includes index.

ISBN 0-13-440488-2

1. Microeconomics. I. Fair, Ray C. II. Title.

HB171.5.C3123 1995 95-36372

330—dc20

CIP

Editor-in-Chief: *Jim Boyd*

Executive Editor: *Leah Jewell*

Development Managing Editor: *Steven Rigolosi*

Assistant Editor: *Teresa Cohan*

Director of Production & Manufacturing: *Joanne Jay*

Production Liaison: *Anne Graydon*

Design Director: *Patricia Wosczyk*

Interior Design: *BB&K Design*

Cover Design: *Patricia Wosczyk*

Cover Art: *Theo Rudnak*

Manager of Production Services: *Lorraine Patsco*

Technical Art: *Warren Fishbach*

Manufacturing Buyers: *Marie McNamara and Vincent Scelta*

Marketing Manager: *Susan McLaughlin*

Photo Administration and Research: *Melinda Reo and Teri Stratford*

Editorial and Production Assistance: *Mary Beth Sanok and Renee Pelletier*

Supplements Development House: *O'Donnell & Associates*

Production House: *York Production Services*

Compositor: *York Graphic Services*

Printer: *VonHoffman Press*

Photo credits follow index.



© 1996, 1994, 1992, 1989

by Prentice-Hall, Inc.

A Division of Simon & Schuster

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 permission in writing from the publisher.

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

ISBN 0-13-440488-2

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*

The process of revising a principles of economics text reveals dramatically how rapidly the world changes. When our first edition was published in 1989, the Berlin Wall had not yet fallen, the Cold War still raged, and Iraq had not yet invaded Kuwait. By the time our third edition was published in 1994, the disintegration of the Soviet Union had given way to a new administration in Washington, a jobless recovery from the recession of 1990–1991, a new tax act, and chaos in Eastern Europe. A year and a half later, the jobless recovery turned into an expansion that the Federal Reserve began trying to slow. The Japanese yen and the German mark appreciated beyond anyone's expectations, NAFTA and GATT were ratified, Mexico did a 180-degree turnaround, and the emerging democracies of central Europe began growing while Russia struggled with the privatization process.

Because events have changed the economic landscape so rapidly, we decided to revise *Principles of Economics* after two years instead of the usual three. All tables and figures have been updated with the most recent data available, and the case studies (with accompanying videos) that end each part are completely new. And while 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 fourth 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 additional 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 100,000 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 extrane-

ous material, simplified several of the more analytical sections, and redrawn many of the more technical graphs with using numbers rather than variable names. And, 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 FOURTH EDITION

Despite major revisions and new features, the themes of the fourth edition are the same themes of the first three 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 three editions, the fourth edition also attempts to present differing theoretical views in an evenhanded way.

While 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 urban problems).

## MACROECONOMICS

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, one needs 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 third 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 pre-

sent 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 in 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, and in Chapter 33 we use the material in Chapter 32 to analyze further macroeconomic issues. Chapters 32 and 33 have been grouped into an optional part that 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 34) and economic growth and productivity (Chapter 35).

**Content** In preparing the fourth 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 pos-

itive 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 FOURTH EDITION

### 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 information, environmental economics, the recession of 1990–1991 and the recovery from it, the national debt, the economics of health-care reform, the recent experiences of Russia and Poland, real business cycle theory, the policies of the European Union and APEC, and the collapse of the Mexican peso, to name just a few.

### THE BEA'S NEW PROCEDURE

The Bureau of Economic Analysis (BEA) made 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. Fortunately, we knew about this change in time to incorporate it into the book. (The

“new” data have in fact been available in Table 7.1 in the *Survey of Current Business* for a few years.) The BEA's new procedure is carefully explained in Chapter 22, and we no longer refer anywhere in the text to real variables being in constant dollars and to implicit price deflators. The real magnitudes in the figures are the chain-type annual weights quantity indexes, and the prices are the chain-type annual weights price indexes. We also focus on growth rates in the discussion in the text, since this is now the focus of the BEA.

### 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 32–35 are optional. The chapters in the international section, with the exception of Chapter 37, 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 created three types of boxes for the fourth 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 Controversies* 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% 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 introduced in the second edition proved to be quite popular. The fourth edition features ten new case studies on topics ranging from rain-forest preservation to the Venezuelan banking crisis. Each case study is accompanied by a video and 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.

## THE TEACHING/LEARNING PACKAGE

Each component of the teaching and learning package has been carefully crafted to ensure that the principles of economics course is a rewarding experience for both instructors and students. All of the supplements have been significantly revised for the fourth edition. In addition, several innovative new supplements are available. To see a sample chapter from each of the ancillaries, ask your sales representative for a Case/Fair supplements sampler.

### ECONOMICS EXPLORER MULTIMEDIA SOFTWARE/CD-ROM (*New!*)

The Economics Explorer software/CD-ROM—created by Logal Educational Software with the assistance of Steven Tomlinson of the University of Texas at Austin—combines video, animation, and spreadsheets to create the most powerful instructional software available. Logal has taken the basic economic models from the textbook and created a series of dynamic, interactive simulations that bring economics to life and helps students visualize how math, graphs, and economic intuition are connected.

Economics Explorer comes with 24 prepared labs, each one based on a key economics concept: the multiplier effect, profit maximization, market clearing, and so forth. Within each lab, an instructor introduces the concept with a mini-lecture illustrated with animated charts and graphs, manipulable equations, and film clips tying the concept to the “real world.” The instructor then shows the student how to use the economic simulation to solve a problem from the textbook. Students can manipulate the model by entering numbers in equations, shifting curves in graphs, or adjusting values in circular flow diagrams.

Once students have learned to use the simulation, they will want to design their own experiments and test their own conjectures. Playing with Explorer, students can test the limits of economic models, input their own data to recreate events from economic history, and (using Explorer’s spreadsheet capabilities) record the results and display them in graphs like those from their textbook. By clicking icons, students can move quickly to any point in a lab or, if they want a quick review, to any topic in the series.

Instructors can use the prepared labs or customize their own exercises using Explorer’s user-friendly design

tools. The accompanying Instructor's Guide also provides tips for integrating Economics Explorer into your course and using Explorer to add power to classroom presentations.

The Explorer is much more than a computerized study guide. It's a fun, flexible program that takes full advantage of computer power to help students with diverse learning styles visualize economics.

## 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 in the study guides corresponds to a chapter in the textbook and contains the following features:

- **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.
- **Exercises and Problem Sets:** A series of questions that require the use of graphic or numerical analysis to solve economic problems. Also includes problems that present real-world situations and ask students to apply economic theory to their own experiences.
- **Practice Tests:** A series of multiple-choice, short-answer, discussion, and application questions designed to test students' grasp of the material and help them prepare for exams.
- **Solutions:** Complete solutions—not just answers—to all questions in the Study Guide, complete with page references to the text.

In addition, each Study Guide contains an introductory section (by Steven Pitts of Houston Community College) that guides students through graphing techniques. "Graphing Pitfalls" sections in selected chapters feature additional tips and insights for students as they learn the graphical material in that chapter.

## INSTRUCTOR'S RESOURCE MANUALS

Two innovative instructor's resource manuals, both by Patricia Euzent of the University of Central Florida, are available, one for *Principles of Microeconomics* and one for *Principles of Macroeconomics*. The instructor's resource manuals (IRMs) are the key integrative supplement in the teaching and learning package and have

been designed with the *teaching* of economics in mind. Each chapter in the instructor's manuals corresponds to a chapter in the student text and includes suggestions for integrating all of the elements (both printed and electronic) of the teaching/ learning package into the classroom. The manuals also include chapter outlines with key terminology; teaching notes and lecture suggestions that provide ideas for applying theory, reinforcing key concepts, overcoming student misconceptions, initiating classroom discussion, and integrating outside readings and global examples into the lecture; additional problems with solutions; solutions to all odd-numbered problems in the text; and solutions to all the analytical thinking questions that accompany the book's ten case studies.

The IRMs include a new section not in the previous edition. *Extended Applications for Teaching Economics* is a collection of instructors' favorite ideas, exercises, activities, experiments, and games that help economics come alive.

## TEST ITEM FILE

The Case/Fair complete test item file is a revised, expanded, and comprehensive test bank of approximately 4500 short-answer/essay, multiple-choice, true/false, and problem set questions. The questions are divided into three levels of difficulty—easy, moderate, and difficult—and are page-referenced to the text. Problem sets (a series of questions based on a graph or scenario) can contain all three levels. Also included are challenging questions that require students to undertake several steps of reasoning, or to work backwards from effect to cause. A test item file is available for both *Principles of Microeconomics* and *Principles of Macroeconomics*. Both are available in printed and electronic (word processing) formats.

## PRENTICE HALL CUSTOM TEST

The test item file is designed for use with the Prentice Hall Custom Test, a computerized package that allows users to custom design, save, and generate classroom tests. The test program (which runs on DOS-based computers) permits professors to edit and add or delete questions from the test item file, to edit existing graphics and create new graphics, and to export files to various word processing programs, including WordPerfect and Microsoft Word. Graphics capability ensures that all graphs included in the test item file can be printed next to the appropriate questions.



For those with limited access to computers or secretarial support, Prentice Hall's Telephone Testing Service allows professors to order customized tests by calling a toll-free telephone number a few days before the test is to be administered. Additional information about the various forms of testing services can be obtained from your Prentice Hall sales representative.

### REAL-WORLD PROBLEM SETS (*New!*)

This new ancillary, prepared by Chris Colburn of Old Dominion University for *Principles of Microeconomics* and a team of four authors—Tom Beveridge (North Carolina State University), Lori Dickes (University of Central Florida), Ken Parzych (Eastern Connecticut State University), and Dennis Placone (Clemson University)—for *Principles of Macroeconomics*, provides over 2000 all-new questions that focus on analysis and problem solving. Created to provide the instructor with an additional testing resource and available in both printed and electronic formats, the Real-World Problem Sets can be used as quiz/testing tools or as homework problems.

Each problem set is based on current events and/or newspaper or magazine clippings. Students are asked to analyze a scenario or minicase, draw or interpret graphs, and answer questions. Solutions are provided for each problem.

### TRANSPARENCY RESOURCE PACKAGE WITH POWERPOINT TRANSPARENCIES

There are more than 300 graphs and charts in the combined *Principles of Economics* text. The Transparency Resource Package, prepared by Kathy Nantz of Fairfield University and Beth Ingram of Iowa State University, includes reproductions of key text graphs on full-color 8 1/2" x 11" acetates for classroom use. Each acetate is accompanied by lecture notes.

Also included is a series of PowerPoint presentations that summarize concepts and theories, emphasize problem solving, provide visual support for lectures, and show the relevance of economics. The PowerPoint disk also includes additional sets of time-series data (not included in the textbook), drawn from a variety of sources. Lecture notes include a snapshot of each PowerPoint slide, provide lecture suggestions and discussion questions, and help instructors correlate the slides with the text and their classroom presentations.

### ABC/PRENTICE HALL VIDEO LIBRARY FOR PRINCIPLES OF ECONOMICS



ABC News and Prentice Hall have combined their experience in academic publishing and global reporting to provide a comprehensive video ancillary to the fourth edition. The library contains 30 news clips from the ABC News programs *Nightline*, *World News Tonight*, *Business World*, and *This Week With David Brinkley*. Each of the clips has been chosen to illustrate or supplement a specific discussion in the text. All the videos are timely or timeless, and many can be used at different points in the course. The Video Guide provides suggestions on where and how to integrate each video.

### VIDEO GUIDE

The integrated *Video Guide* (prepared by Steven Tomlinson of the University of Texas at Austin) includes a summary of each of the 30 video clips in the Video Library. For each video, the Video Guide includes running time, teaching notes, and in-class exercises.



### THE NEW YORK TIMES "THEMES OF THE TIMES" PROGRAM

*The New York Times* and Prentice Hall are sponsoring "Themes of the Times": a program designed to enhance student access to current information of relevance in the classroom.

Through this program, the core subject matter provided in the text is supplemented by a collection of articles from one of the world's most distinguished newspapers, *The New York Times*. These articles demonstrate the vital, ongoing connections between what is learned in the classroom and what is happening in the world around us.

A new edition of the mini-newspaper is available annually and is provided free to students upon adoption. For students and professors who want to enjoy the wealth of information of *The New York Times* daily, a reduced subscription rate is available in deliverable areas. For information, call toll-free: 1-800-631-1222.

### PRINCIPLES OF ECONOMICS SOFTWARE AND WORKBOOK

Working with Microsoft Excel for Windows, the *Principles of Economics* software and workbook allow

students to solve problems and create and analyze graphs without getting bogged down in calculations. Prepared by Ray Whitman of the University of the District of Columbia, the software/workbook teaches students how to use Excel with an easy-to-use tutorial. Once they've mastered the basics, students then work with a series of problems built around key economic concepts. Many of the problems are based on text or Study Guide problem sets. Students enter and manipulate data, draft and shift graphs, and answer questions regarding what has happened. Solutions to all exercises are provided at the end of each chapter.

## ACKNOWLEDGMENTS

We are grateful to many people for help on the fourth edition. As was the case for the third edition, we are most grateful to Steven Rigolosi, Managing Editor of Development for Business and Economics at Prentice Hall, for overseeing the entire project. The quality of the book owes much to his wise guidance. Joe Boyer proofread the entire manuscript in pages. We also owe much to Leah Jewell, Executive Editor for Economics at Prentice Hall, for her help and enthusiasm. A special debt of gratitude goes to Dereka Rushbrook and Joe Ricciardi.

We are greatly indebted to the supplements team for their help in preparing the teaching/learning package that accompanies the text. Specifically, we would like to thank Tom Beveridge, Steven Tomlinson, Ray Whitman, Steven Pitts, Pat Euzent, Kathy Nantz, Beth Ingram, Chris Colburn, Lori Dickes, Ken Parzych, and Dennis Placone. We'd also like to thank Carrie O'Donnell, Michele Fitzpatrick, and, in particular, Pamela Barter of O'Donnell & Associates for their help in managing the development of the supplements. We have benefited enormously from working with this dedicated team of professionals.

For their much-appreciated input into *Principles of Microeconomics*, we'd like to thank Richard Duboff of Bryn Mawr and Mark Killingsworth of Rutgers University. We are also indebted to Sarah Bay, Elena Rangelova, Jack Triplett of the BEA, and Susan Skeath.

A great deal of credit goes to the many "behind-the-scenes" people at Prentice Hall who helped us prepare the fourth edition. We'd like to thank Anne Graydon, our production liaison and Kirsten Kauffman from the production house; Teri Stratford, photo researcher, for her first-class photos; Theo

Rudnak for the cover illustration; Lorraine Patsco, John Nestor, and Warren Fishbach for their help in preparing the art for this edition; Mary Beth Sanok, Kristen Kaiser, and Renée Pelletier, editorial assistants, who helped us in innumerable ways; and Susan McLaughlin, marketing manager, for her enthusiasm and verve. Special thanks go to Teresa Cohan, assistant editor, for her dedication in pulling the many components of this project together.

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

- William T. Bogart, Case Western Reserve University
- David Buffum, College of the Holy Cross
- Ronald Crowe, University of Central Florida
- David Culp, Slippery Rock University
- Richard Duboff, Bryn Mawr College
- Ramzi Frangul, Sacred Heart University
- Roy T. Gobin, Loyola University of Chicago
- Mark Killingsworth, Rutgers University
- Gary F. Langer, Roosevelt University
- Gabriel Manrique, Winona State University
- David Merriman, Loyola University of Chicago
- Joanna Moss, San Francisco State University
- John R. Neill, Western Michigan University
- Jan Palmer, Ohio University
- Martin T. Pond, Purdue University
- Susan Porter-Hudak, Northern Illinois University
- Ruth Shen, San Francisco State University
- John Sullivan, Raritan Valley Community College
- Mohammed Zaheer, Manchester Community Technical College

Last, but not least, the following individuals were of immense help in reviewing all or part of this book and 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, Moorhead 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 Hoaas, 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 • Shahrzad 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 • Spiro 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 Shackleford, 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 • Dusan 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 Trierwiler, Northern State University • Brian M. Trinique, 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 fourth 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.

# A BOUT THE AUTHORS



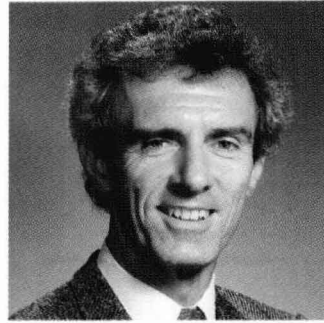
## **Karl E. Case**

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 three years in the army, and received his M.A. and Ph.D. from Harvard University. In 1980 and 1981 he was a Liberal Arts 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 18 years, he has taught at Wellesley, where he was Department Chair from 1982 to 1985. Before coming to Wellesley, he spent two years 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 macroeconomics.



# BRIEF TABLE OF CONTENTS

## INTRODUCTION

### PART 1: Introduction to Economics 1

1. The Scope and Method of Economics 1
2. The Economic Problem: Scarcity and Choice 27
3. The Structure of the U.S. Economy: The Private, Public, and International Sectors 49
4. Demand, Supply, and Market Equilibrium 72
5. The Price System, Supply and Demand, and Elasticity 104

## MICROECONOMICS

### PART 2: Foundations of Microeconomics: Consumers and Firms 134

6. Household Behavior and Consumer Choice 134
7. The Behavior of Profit-Maximizing Firms and the Production Process 167
8. Short-Run Costs and Output Decisions 195
9. Cost and Output Decisions in the Long Run 220
10. Input Demand: The Labor and Land Markets 249
11. The Capital Market and the Investment Decision 274
12. General Equilibrium and the Efficiency of Perfect Competition 296

### PART 3: Market Imperfections and the Role of Government 322

13. Monopoly 322
14. Monopolistic Competition and Oligopoly 350
15. Antitrust and Regulation 377
16. Externalities, Public Goods, Imperfect Information, and Social Choice 402
17. Income Distribution and Poverty 432

### PART 4: Current Microeconomic Issues 463

18. Public Finance: The Economics of Taxation 463
19. The Economics of Labor Markets and Labor Unions 487
20. Current Topics in Applied Microeconomics: Health Care, Immigration, and Urban Problems 514

## MACROECONOMICS

### PART 5: Concepts and Problems in Macroeconomics 545

21. Introduction to Macroeconomics 545
22. Measuring National Output and National Income 568
23. Macroeconomic Problems: Unemployment and Inflation 595

### PART 6: Macroeconomic Principles and Policy 614

24. Aggregate Expenditure and Equilibrium Output 614
25. The Government and Fiscal Policy 640
26. The Money Supply and the Federal Reserve System 667
27. Money Demand, the Equilibrium Interest Rate, and Monetary Policy 696

### PART 7: Macroeconomic Analysis and Issues 718

28. Money, the Interest Rate, and National Income: Analysis and Policy 718
29. Aggregate Demand, Aggregate Supply, and Inflation 738
30. The Labor Market, Unemployment, and Inflation 768
31. Deficit Reduction, Stabilization Policy, and Macro Issues Abroad 790

PART 8: Household and Firm Behavior in the Macroeconomy: A Closer Look 816

- 32. Household and Firm Behavior in the Macroeconomy 816
- 33. Further Topics in Macroeconomic Analysis 843

PART 9: Debates in Macroeconomics and Economic Growth 862

- 34. Debates in Macroeconomics: Monetarism, New Classical Theory, and Supply-Side Economics 862
- 35. Economic Growth and Productivity 881

## INTERNATIONAL ECONOMICS

PART 10: The Global Economy 906

- 36. International Trade, Comparative Advantage, and Protectionism 906

- 37. Open-Economy Macroeconomics: The Balance of Payments and Exchange Rates 931
- 38. Economic Growth in Developing Nations 965
- 39. Economies in Transition and Alternative Economic Systems 989

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

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

**INDEX I-1**



# C CONTENTS

## PREFACE XXIII

### 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 7*

#### THE SCOPE OF ECONOMICS 7

*Microeconomics and Macroeconomics 8*

*Diversity of Economics 8*

#### THE METHOD OF ECONOMICS 9

*Theories and Models 11*

*Economic Policy 15*

*APPLICATION: The Fields of Economics 10*

#### AN INVITATION 17

SUMMARY 17

REVIEW TERMS AND CONCEPTS 18

PROBLEM SET 18

APPENDIX: How to Read and Understand  
Graphs 19

### 2 The Economic Problem: Scarcity and Choice 27

#### SCARCITY, CHOICE, AND OPPORTUNITY COST 28

*The Three Basic Questions 28*

*The Production Possibility Frontier 33*

*The Economic Problem 40*

#### ECONOMIC SYSTEMS 41

*Command Economics 41*

*Laissez-Faire Economies: The Free Market 41*

*Mixed Systems, Markets, and Governments 44*

*GLOBAL PERSPECTIVE: Poland and the Russian  
Republic: An Update 42*

LOOKING AHEAD 46

SUMMARY 46

REVIEW TERMS AND CONCEPTS 47

PROBLEM SET 48

### 3 The Structure of the U.S. Economy: The Private, Public, and International Sectors 49

#### THE PRIVATE SECTOR: BUSINESS AND INDUSTRIAL ORGANIZATION IN THE UNITED STATES 50

*The Legal Organization of Firms 50*

*The Organization of Industries 53*

*How Competitive Is the U.S. Economy? 57*

*Structural Change Since 1970 58*

#### THE PUBLIC SECTOR: TAXES AND GOVERNMENT SPENDING IN THE UNITED STATES 59

*The Size of the Public Sector 61*

*Government Expenditures 63*

*Sources of Government Revenue 64*

*ISSUES AND CONTROVERSIES: The Changing  
Mix of Jobs in the United States 60*

#### THE INTERNATIONAL SECTOR: IMPORTS AND EXPORTS IN THE UNITED STATES 66

#### FROM INSTITUTIONS TO THEORY 69

SUMMARY 69

REVIEW TERMS AND CONCEPTS 70

PROBLEM SET 70

### 4 Demand, Supply, and Market Equilibrium 72

#### FIRMS AND HOUSEHOLDS: THE BASIC DECISION-MAKING UNITS 73

#### INPUT MARKETS AND OUTPUT MARKETS: THE CIRCULAR FLOW 74

#### DEMAND IN PRODUCT/OUTPUT MARKETS 75

*Price and Quantity Demanded: The Law  
of Demand 77*

*Other Determinants of Household Demand 79*

*Shift of Demand versus Movements along  
a Demand Curve 82*

*From Household Demand to Market Demand 84*

## SUPPLY IN PRODUCT/OUTPUT MARKETS 84

*Price and Quantity Supplied: The Law of Supply* 87

*Other Determinants of Firm Supply* 88

*Shift of Supply versus Movement Along a Supply Curve* 89

*From Individual Firm Supply to Market Supply* 91

## MARKET EQUILIBRIUM 92

*Excess Demand* 92

*Excess Supply* 94

*Changes in Equilibrium* 95

## DEMAND AND SUPPLY IN PRODUCT MARKETS: A REVIEW 98

## LOOKING AHEAD: MARKETS AND THE ALLOCATION OF RESOURCES 98

*APPLICATION: Supply and Demand in the News* 99

SUMMARY 100

REVIEW TERMS AND CONCEPTS 101

PROBLEM SET 102

# 5 The Price System, Supply and Demand, and Elasticity 104

## THE PRICE SYSTEM: RATIONING AND ALLOCATING RESOURCES 104

*Price Rationing* 104

*Constraints on the Market and Alternative Rationing Mechanisms* 106

*Prices and the Allocation of Resources* 112

*GLOBAL PERSPECTIVE: The Market Comes to Cuba* 108

*ISSUES AND CONTROVERSIES: Tickets? Supply Meets Demand on the Sidewalk* 111

## SUPPLY AND DEMAND ANALYSIS: AN OIL IMPORT FEE 113

## ELASTICITY 115

*Price Elasticity of Demand* 116

*Calculating Elasticities* 119

*The Determination of Demand Elasticity* 125

*Other Important Elasticities* 127

*APPLICATION: London Newspapers and New York Restaurants Learn About Elasticity* 126

## LOOKING AHEAD 128

SUMMARY 128

REVIEW TERMS AND CONCEPTS 129

PROBLEM SET 129

*CASE STUDY: Supply and Demand in the U.S. Paper Industry* 132

# MICROECONOMICS

## PART 2: Foundations of Microeconomics: Consumers and Firms 134

# 6 Household Behavior and Consumer Choice 134

## HOUSEHOLD CHOICE IN OUTPUT MARKETS 136

*The Determinants of Household Demand* 137

*The Budget Constraint* 137

## THE BASIS OF CHOICE: UTILITY 142

*Diminishing Marginal Utility* 142

*Allocating Income to Maximize Utility* 143

*The Utility-Maximizing Rule* 145

*Diminishing Marginal Utility and Downward-Sloping Demand* 146

*Income and Substitution Effects* 147

*APPLICATION: The Tax Laws and the Income and Substitution Effects* 150

## CONSUMER SURPLUS 149

## HOUSEHOLD CHOICE IN INPUT MARKETS 152

*The Labor Supply Decision* 152

*The Price of Leisure* 153

*Income and Substitution Effects of a Wage Change* 154

*Saving and Borrowing: Present versus Future Consumption* 155

## A REVIEW: HOUSEHOLDS IN OUTPUT AND INPUT MARKETS 157

SUMMARY 157

REVIEW TERMS AND CONCEPTS 158

PROBLEM SET 159

*APPENDIX: Indifference Curves* 160

# 7 The Behavior of Profit-Maximizing Firms and the Production Process 167

## THE BEHAVIOR OF PROFIT-MAXIMIZING FIRMS 171



PROFITS AND ECONOMIC COSTS 172  
*Short-Run versus Long-Run Decisions* 174  
*The Bases of Decisions: Market Price of Output, Available Technology, and Input Prices* 175

THE PRODUCTION PROCESS 176  
*Production Functions: Total Product, Marginal Product, and Average Product* 177  
*Production Functions with Two Variable Factors of Production* 181

CHOICE OF TECHNOLOGY 182

GLOBAL PERSPECTIVE: *Production Technologies: Robots in the United States, Skyscrapers in India* 183

SUMMARY 185  
REVIEW TERMS AND CONCEPTS 186  
PROBLEM SET 186

APPENDIX: *From Technology and Factor Prices to Cost: Isoquants and Isocosts* 188

## 8 Short-Run Costs and Output Decisions 195

COSTS IN THE SHORT RUN 196  
*Fixed Costs* 197  
*Variable Costs* 198  
*Total Costs* 206  
*Short-Run Costs: A Review* 207

OUTPUT DECISIONS: REVENUES, COSTS, AND PROFIT MAXIMIZATION 209  
*Total Revenue (TR) and Marginal Revenue (MR)* 210  
*Comparing Costs and Revenues to Maximize Profit* 210  
*The Short-Run Supply Curve* 213

LOOKING AHEAD 213

APPLICATION: *Case Study in Marginal Analysis: An Ice-Cream Store* 214

SUMMARY 217  
REVIEW TERMS AND CONCEPTS 218  
PROBLEM SET 218

## 9 Costs and Output Decisions in the Long Run 220

SHORT-RUN CONDITION AND LONG-RUN DIRECTIONS 221  
*Maximizing Profits* 222  
*Minimizing Losses* 224

*The Short-Run Industry Supply Curve* 227  
*Long-Run Directions: A Review* 228

LONG-RUN COSTS: ECONOMIES AND DISECONOMIES OF SCALE 229  
*Increasing Returns to Scale* 230  
*Constant Returns to Scale* 233  
*Decreasing Returns to Scale* 234

APPLICATION: *Why Small Farmers Have Trouble Competing: Economies of Scale in Agriculture and Hog Raising* 232

ISSUES AND CONTROVERSIES: *The Long-Run Average Cost Curve: Flat or U-Shaped?* 239

LONG-RUN ADJUSTMENTS TO SHORT-RUN CONDITIONS 235  
*Short-Run Profits: Expansion to Equilibrium* 235  
*Short-Run Losses: Contraction to Equilibrium* 237  
*The Long-Run Adjustment Mechanism: Investment Flows Toward Profit Opportunities* 238

OUTPUT MARKETS: A FINAL WORD 249

SUMMARY 241  
REVIEW TERMS AND CONCEPTS 241  
PROBLEM SET 242

APPENDIX: *External Economies and Diseconomies and the Long-Run Industry Supply Curve* 243

## 10 Input Demand: The Labor and Land Markets 249

INPUT MARKETS: BASIC CONCEPTS 250

THE LABOR AND LAND MARKETS 253  
*A Firm Using Only One Variable Factor of Production: Labor* 254  
*A Firm Employing Two Variable Factors of Production* 257  
*Land Markets and Pure Rent* 263  
*The Firm's Profit-Maximization Condition in Input Markets* 265

APPLICATION: *Millionaire Baseball Players and Their Marginal Revenue Product* 258

INPUT DEMAND CURVES 266  
*Shifts in Factor Demand Curves* 266

RESOURCE ALLOCATION MIX OF OUTPUT IN COMPETITIVE MARKETS 269

LOOKING AHEAD 271