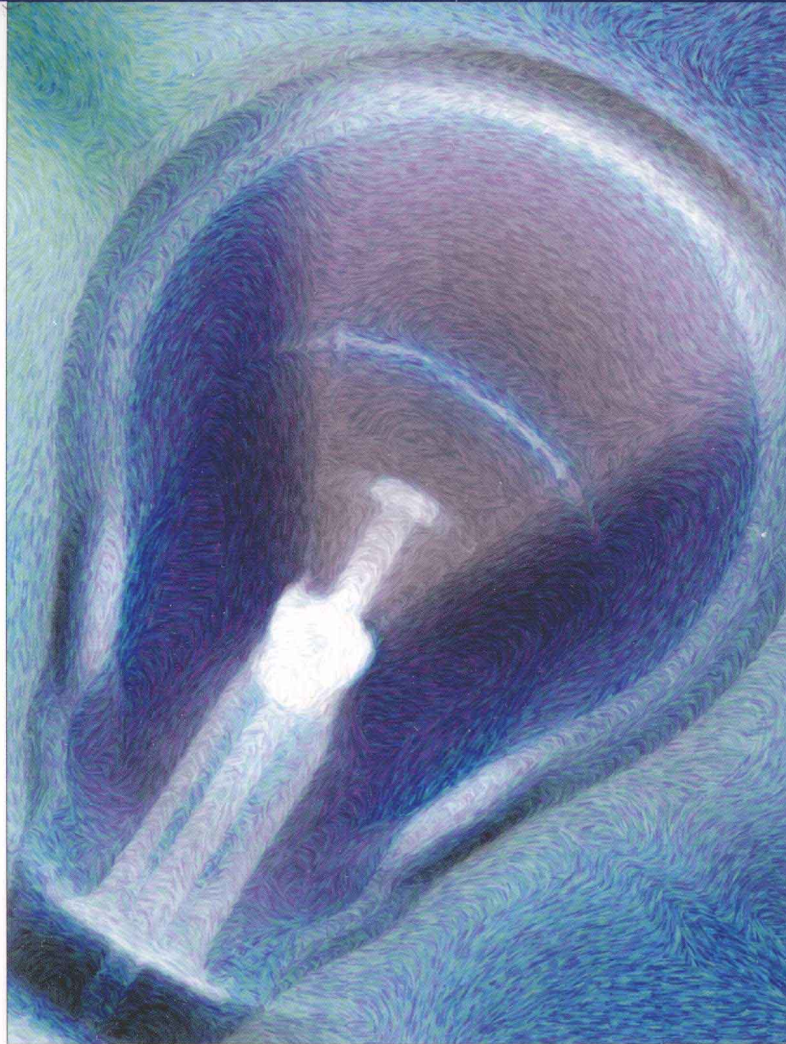


# SURVEY OF ECONOMICS

---

## PRINCIPLES AND TOOLS



O'Sullivan/Sheffrin

# Survey of Economics

## Principles and Tools

**Arthur O'Sullivan**

Oregon State University

**Steven M. Sheffrin**

University of California, Davis



Upper Saddle River, New Jersey 07458

O'Sullivan, Arthur.

Survey of economics: principles and tools / Arthur O'Sullivan, Steven M. Sheffrin.—

1st ed.

p. cm.

Includes bibliographical references and index.

ISBN 0-13-060143-8

1. Economics. I. Sheffrin, Steven M. II. Title.

HB171.5.O843 2001

330—dc21

2001045846

Executive Editor: Rod Banister

Editor-in-Chief: PJ Boardman

Managing Editor (Editorial): Gladys Soto

Assistant Editor: Marie McHale

Editorial Assistant: Lisa Amato

Media Project Manager: Nancy Welcher

Marketing Manager: Joshua P. McClary

Marketing Assistant: Christopher Bath

Managing Editor (Production): Cynthia Regan

Senior Production Editor: Richard DeLorenzo

Production Assistant: Dianne Falcone

Permissions Coordinator: Suzanne Grappi

Associate Director, Manufacturing: Vincent Scelta

Production Manager: Arnold Vila

Design Manager: Patricia Smythe

Interior Design: Lee Goldstein

Cover Design: Marjory Dressler

Manager, Print Production: Christy Mahon

Composition: Suzanne Duda

Printer/Binder: Courier-Kendalville

---

Credits and acknowledgments borrowed from other sources and reproduced, with permission, in this textbook appear on appropriate page within text (or on page PC-1).

Copyright ©2002, by Pearson Education, Inc., Upper Saddle River, New Jersey, 07458. All rights reserved. Printed in the United States of America. This publication is protected by Copyright and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. For information regarding permission(s), write to: Rights and Permissions Department.

Pearson Education LTD.

Pearson Education Australia PTY, Limited

Pearson Education Singapore, Pte, Ltd

Pearson Education North Asia Ltd

Pearson Educación de Mexico, S.A. de C.V.

Pearson Education-Japan

Pearson Education Malaysia, Pte. Ltd

**Prentice  
Hall**

10 9 8 7 6 5 4 3 2 1  
ISBN 0-13-060143-8

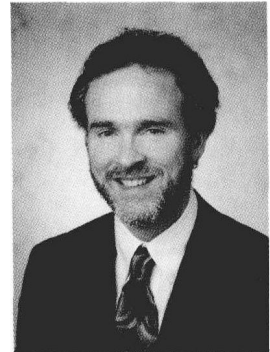
# About the Authors

## Arthur O'Sullivan

Arthur O'Sullivan is a professor of economics at Oregon State University. After receiving his B.S. Degree in economics at the University of Oregon, he spent two years in the Peace Corps, working with city planners in the Philippines. He received his Ph.D. in economics from Princeton University in 1981, and then spent 11 years at the University of California, Davis, where he won several teaching awards. At Oregon State University, he teaches microeconomics at different levels, from the introductory course to advanced courses for doctoral students. He is the author of the best-selling textbook, *Urban Economics*, currently in its fourth edition.

Professor O'Sullivan's research explores economic issues concerning urban land use, environmental protection, and public finance. His articles appear in many economics journals, including *Journal of Urban Economics*, *Journal of Environmental Economics and Management*, *National Tax Journal*, and *Journal of Public Economics*.

Professor O'Sullivan lives with his family in Corvallis, Oregon. He enjoys outdoor activities, including the kids' sport du jour (soccer, basketball, baseball, badminton, lawn hockey, or tackle the guy with the ball). Indoors, he is learning how to play the fiddle, much to the dismay of his family and the delight of the neighborhood dogs.



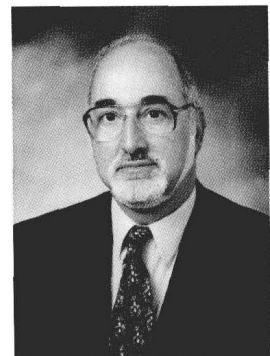
## Steven M. Sheffrin

Steven M. Sheffrin is dean of the division of social sciences and professor of economics at the University of California, Davis. He has been a visiting professor at Princeton University, Oxford University, and the London School of Economics, and served as a financial economist with the Office of Tax Analysis of the United States Department of Treasury. He has been on the faculty at Davis since 1976 and served as the chairman of the department of economics. He received his B.A. from Wesleyan University and his Ph.D. in economics from the Massachusetts Institute of Technology.

Professor Sheffrin is the author of seven other books and monographs and over 80 articles in the fields of macroeconomics, public finance, and international economics. His most recent books include *Rational Expectations* (Second Edition) and *Property Taxes and Tax Revolts: The Legacy of Proposition 13* (with Arthur O'Sullivan and Terri Sexton), both from Cambridge University Press.

Professor Sheffrin has taught macroeconomics at all levels, from large lectures of principles (classes of 400) to graduate classes for doctoral students. He is the recipient of the Thomas Mayer Distinguished Teaching Award in economics.

He lives with his wife Anjali (also an economist) and his two children in Davis, California. In addition to a passion for current affairs and travel, he plays a tough game of tennis.





# Preface

## Our Story

When we set out to write an economics text, we were driven by the vision of the sleeping student. A few years ago, one of the authors was in the middle of a fascinating lecture on monopoly pricing when he heard snoring. It wasn't the first time a student had fallen asleep in one of his classes, but this was the loudest snoring he had ever heard—it sounded like a sputtering chain saw. The instructor turned to Bill, who was sitting next to the sleeping student and asked, "Could you wake him up?" Bill looked at the sleeping student and then gazed theatrically around the room at the other students. He finally looked back at the instructor and said, "Well professor, I think you should wake him up. After all, you put him to sleep."

That experience changed the way we taught economics. It highlighted for us a basic truth—for many students, economics isn't exactly exciting. We took this as a challenge—to get first-time economics students to see the *relevance* of economics to their *lives*, their *careers*, and their *futures*.

In order to get students to see the relevance of economics we knew that we had to *engage* them. With the first and second editions of *Economics: Principles and Tools*, we helped professors to do that by emphasizing an active learning approach. We engaged students by teaching them how to do something—economic analysis. We kept the book brief, lively, and to the point, and used the five key principles of economics as an organizing theme.

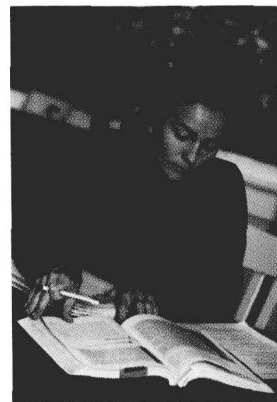


## One Semester Book

Our full length text was a success in the classrooms across the country. But many schools and universities teach a one semester course in economics, which covers both microeconomics and macroeconomics. While instructors can successfully choose material from our full length text for a one-semester course it would be much more valuable to the instructors and students if there were a dedicated one-semester book to meet their needs.

Our objective was to develop a one-semester book that preserved the key features of *Economics: Principles and Tools*. We know we had the right ingredients. Our book was unified by the repeated use of key principles of economics, which stressed the unity of economic thinking. Our style was also right: the text was brief, lively, and fully accessible to students.

In creating a one-semester book, we remained true to our basic teaching philosophy: an introductory course in economics should be taught as if it were the last economics class a student will ever take. Because this is true for most students, we just have an opportunity to teach them how to do economics. The best




way to teach economics is to focus on a few key concepts and ideas and apply them repeatedly in different circumstances.

In designing the one-semester book, we knew we had to focus on just the absolute essentials. In microeconomics, we start with the five key principles of economics and move quickly into the heart of microeconomics—supply and demand. We then turn to production and cost, competition and market structure, market failures, and the labor market. Macroeconomics begins with chapters that introduce national income, unemployment, and inflation. We then focus on the importance of long run economic growth and introduce economic fluctuations. We cover monetary and fiscal policy, both in the long run and the short run. The book concludes with international trade and finance.

We worked hard to make every explanation of key ideas and key concepts as simple as possible. In a one semester course, the student will be introduced to a wide range of ideas. It is important that these ideas be as straightforward and transparent as possible.

## Principles And Tools

In keeping with the themes of relevance and student accessibility, we have organized our text around the five key principles of economics. Throughout the text, every point of theory is tied back to the five key principles and is indicated by the  symbol.

1. **The Principle of Opportunity Cost.** The opportunity cost of something is what you sacrifice to get it.
2. **The Marginal Principle.** Pick the level of an activity at which the marginal benefit equals the marginal cost.
3. **The Principle of Diminishing Returns.** If we increase one input while holding the other inputs fixed, output will increase, but at a decreasing rate.
4. **The Spillover Principle.** In some circumstances, decision makers do not bear all the cost or experience all the benefits from their decision.
5. **The Reality Principle.** What matters to people is the real value of money or income—its purchasing power—not the face value of money or income.

We use these principles to explain the logic underpinning the most important tools of economics. By using these five principles repeatedly, we reveal the logic of economic reasoning and demystify the tools of economics. Students see the big picture and also learn how to use the tools of economics properly.

## “What I Do, I Understand” – Confucius

Our book is based on Active Learning, a teaching approach based on the idea that students learn best by doing. Our book engages students by letting them do activities as they read. We implement Active Learning with the following features:



### ECONOMIC DETECTIVE

#### The Video Elasticity Mystery

The manager of a video-rental store has asked you to solve a mystery. According to national studies of the video-rental market, the price elasticity of demand for video rentals is 0.8: A 10% increase in price decreases the quantity of videos demanded by about 8%. In other words, the demand for videos is inelastic. Based on this information, the manager of the video store increased her price by 20%, expecting her total revenue to increase. She expected the good news (more money per rental) to dominate the bad news (fewer rentals). When her total revenue decreased instead of increasing, she was puzzled. Your job is to solve this mystery.

The key to solving this mystery is to recognize that the manager can't use the results of a national study to predict the effects of increasing her own price. The national study suggests that if all video stores in the nation increase their price by 10%, the total quantity of videos demanded will decrease by about 8%.

- **Economic Detective** exercises provide a few clues and then ask the student to solve the economic mystery.
- **Using the Tools** questions at the end of each chapter give students opportunities to do their own economic analysis. Complete answers appear at the end of each chapter.

- **Economic Experiments** actively involve the student in role-playing as consumers, producers, and policy makers. All these activities are designed to be fun for students and easy for professors, who decide when and how to use them.

- **Test Your Understanding** questions help students determine whether they understand the preceding material before continuing. These are straightforward questions that ask students to review and synthesize what they have read. Complete answers appear at the end of each chapter.

- **Chapter-opening stories** open each chapter and motivate the chapter's subject matter.

- **Each chapter starts with a list of practical questions** that are answered in the chapter.

- **Lively Examples** are integrated throughout the text and help bring economic concepts to life. We have hundreds of fresh, new examples in this edition.

- **A Closer Look boxes** are featured throughout the text and provide brief, interesting examples of the tools and concepts discussed in the text.



## Using the **TOOLS**

This chapter introduced several new tools of economics, including four different elasticities and a formula that can be used to predict the change in price resulting from a change in supply or demand. Here are some opportunities to use these tools to do your own economic analysis.

### 1. Projecting Transit Ridership

As a transit planner, you must predict how many people ride commuter trains and how much money is generated from train fares. According to a recent study,<sup>7</sup> the short-run price elasticity of demand for commuter rail is 0.62 and the long-run elasticity is 1.59. The current ridership is 100,000 people per day. Suppose fares increase by 10%.

- Predict the changes in train ridership over a one-month period (short run) and a five-year period (long run).
- Over the one-month period, will total revenue increase or decrease? What will happen in the five-year period?

### 2. Bumper Crops

Your job is to predict the total revenue generated by "bumper crops" of wheat. Last year's bumper crop was 100 million bushels at a price of \$2.00 per bushel.



## **TEST** Your Understanding

- Money solves the problem of double coincidence of wants that would regularly occur under a system of \_\_\_\_\_.
- Why is money only an imperfect store of value?
- What is the problem associated with the double coincidence of wants?
- Because we measure all prices in monetary units, money serves as a unit of account. True or false? Explain.
- Why are checks included in the definition of money?

## **A CLOSER LOOK**

### Foreign Sweatshops and Codes of Conduct

Several widely publicized reports have documented poor working conditions and low wages in foreign factories that produce shoes, clothing, and toys for U.S. corporations. In 1996, a report revealed that part of Wal-Mart's Kathie Lee Collection was produced in Honduras by people working 20 hours per day for 31 cents per hour.<sup>9</sup> Similar reports suggested that goods sold by Nike, Disney, and Mattel were produced in overseas sweatshops. Some human-rights activists have organized protests to publicize what they consider unethical business practices and have organized consumer boycotts.

The corporations have responded to the uproar by monitoring the firms that produce their goods and establishing codes of conduct for foreign suppliers.<sup>10</sup> The Council on Economic Priorities, an interest group in New York, inspects workplaces and awards Social Accountability "2000" to

- How much more are consumers willing to pay for "No Sweat" products?
- Will firms selling "No Sweat" products lose customers to firms selling products produced in factories that don't meet the codes of conduct?



# The Teaching And Learning Package

Each component of the teaching and learning package has been carefully crafted to ensure that the introductory economics course is a rewarding experience for both students and instructors. Each component of the teaching and learning package has been carefully crafted to ensure that the introductory economics course is a rewarding experience for both students and instructors. Fernando Quijano of Dickinson State University and Yvonne Quijano have carefully adapted each of the supplements that accompany *Economics: Principles and Tools*, 2/e to create a complete, book-specific package for Survey of Economics: Principles and Tools.

## Technology Supplements

### Prentice Hall Test Manager, Version 4.1

The Test Bank was designed for use with the Prentice Hall Test Manager, a computerized package that allows instructors to custom design, save, and generate classroom tests. The test program (in PC Windows and Macintosh formats) permits instructors to edit, add, or delete questions from the test banks; edit existing graphics and create new graphics; analyze test results; and organize a database of tests and student results.

### Active Learning CD-ROM

This interactive student CD-ROM, created by Stephen Perez of Washington State University, in conjunction with Gregory M. Werner, Inc., includes self-assessment quizzes for each chapter, a tutorial walk-through of the key graphs in the text, and a Graph Builder application. The CD-ROM features over fifty Active Graphs selected from key figures in the text and referenced with an icon:

which allow students to manipulate variables in the graphs and note the changes and effects. A graph-assessment quiz follows each Active Graph. The Active Learning CD-ROM also links the student to PHLIP/CW Web site.

### PowerPoint Presentation

This lecture presentation tool, prepared by Fernando Quijano of Dickinson State University, offers outlines and summaries of important text material, tables and graphs that build, and additional exercises. The PowerPoint Presentation is downloadable from the O'Sullivan/Sheffrin Web site at [www.prenhall.com/osullivan](http://www.prenhall.com/osullivan).

### ABC/Prentice Hall Video Library



Prentice Hall and ABC News have combined their experience in academic publishing and global reporting to provide a comprehensive video ancillary to enhance our principles of economics texts. Through its wide variety of award-winning programs, such as *Nightline*, *This Week With David Brinkley*, *World News Tonight*, and *20/20*-ABC offers a resource for feature and documentary-style videos related to the chapters in the text. The programs have extremely high production quality, present substantial content, and are hosted by well-versed, well-known anchors.

### Prentice Hall's Learning on the Internet Partnership/myPHLIP

(<http://www.prenhall.com/osullivan>)

myPHLIP is a content-rich, multidisciplinary Web site with Internet exercises, activities, and resources related specifically to *Survey of Economics: Principles and Tools*.



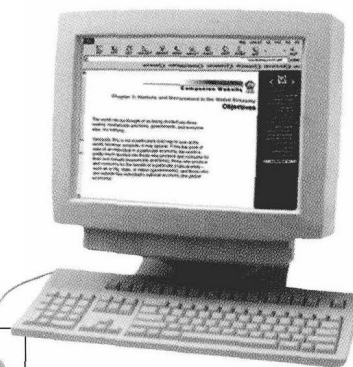
New Internet resources are added every two weeks by a team of economics professors to provide both the student and the instructor with the most current, up-to-date resources available.

**Current Events Articles and Exercises**, related to topics in each chapter, are fully supported by group activities, critical-thinking exercises, and discussion questions. These articles, from current news publications to economics-related publications, help show students the relevance of economics in today's world.

The Online Study Guide prepared by Leonie Stone of SUNY Geneseo offers students another opportunity to sharpen their problem-solving skills and to assess their understanding of the text material. The Online Study Guide for O'Sullivan/Sheffrin contains two levels of quizzes: definitional and applied. Each level includes 10 to 15 multiple-choice, true/false, and 2 essay questions per chapter. The Online Study Guide grades each question submitted by the student, provides immediate feedback for correct and incorrect answers, and allows students to e-mail results to up to four e-mail addresses.

The myPHLIP site also links the student to the Take it to the Net exercises featured in the textbook. These Web-destination exercises are keyed to each chapter and direct the student to an appropriate, updated, economics related Web site to gather data and analyze a specific economic problem.

For the instructor, myPHLIP offers resources such as the Syllabus Manager, answers to Current Events and Internet exercises, and a Faculty Lounge area including teaching resources and faculty chat rooms. From the myPHLIP web site, instructors can also download supplements and lecture aids, including the Instructor's Manuals and PowerPoint Presentations. Instructors should contact their Prentice Hall sales representative to get the necessary username and password to access the faculty resources on myPHLIP.



#### Chapter 10: Long-Run Supply and Market Dynamics

##### Current Events

Our team is hard at work building great exercises based on the very latest information. Check back often to see what they have created for you. If you have ideas for current event exercises, click [here](#) to find out how to create and submit your work for publication on PHLIP/CW. We offer a peer-reviewed process and compensation for published exercises.

- [Shake-Up in Light Trucks Is Coming Down the Pike](#) (08/08/06)
- [On-Line Retailing: Web Browsing](#) (04/07/07)
- [Flying the Trouble: The Airline Industry Just Can't Stand Prosperity](#) (08/08/07)

## On-line Course Offerings

### WebCT



Developed by educators, WebCT provides faculty with easy-to-use Internet tools to create on-line courses. Prentice Hall provides the content and enhanced features to help instructors create a complete on-line course. For more information, please visit our web site, located at (<http://www.prenhall.com/webct>).

### Blackboard

Easy to use, Blackboard's single template and tools make it easy to create, manage, and use on-line course materials. Instructors can create on-line courses using the Blackboard tools, which include design, communication, testing, and course management tools. For more information, please visit our website located at <http://www.prenhall.com/blackboard>.



### CourseCompass

This customizable, interactive online course management tool powered by Blackboard, provides the most intuitive teaching and learning environment available. Instructor's can communicate with students, distribute course material, and access student progress online. For further information, please visit our website located at <http://www.prenhall.com/coursecompass>.

## **CourseCompass with Ebook**

Provides the features of CourseCompass along with an electronic version of the textbook. The addition of digital textbooks to CourseCompass gives instructors greater choice and flexibility as they design and build their online courses. With this feature, students can remain online and use an eBook for all of their online assignments.

## **Print Supplements**

### **Test Bank**

We've assembled a team of dedicated educators to edit, write, review, and accuracy check the over 7,000 multiple-choice questions in both the test bank.

The Test Bank, prepared by Sheryl Ball and Mark McLeod, both of Virginia PolyTechnic University, and Mary Lesser of Iona College, offers multiple-choice, true/false, short answer, and problem questions. Each question is keyed by degree of difficulty (easy, moderate, or hard), page reference, and type of question (comprehension, knowledge or application/analysis). It contains a wealth of new questions and totally new graphs.

The authors worked together and with a team of technical reviewers to follow a strict formula of screening, analysis, and assessment of every test question. Linda Ghent and Jeffrey DeSimone, both of East Carolina University, Peggy Crane of Southwestern College, and James Swofford of University of South Alabama, contributed to a continuous technical review and numerous accuracy checks of both test banks.

### **Instructor's Manual**

The Instructor's Manual, prepared by Stephen Perez of Washington State University, and Leonie Stone of SUNY, Geneseo, reflect the textbook's organization, incorporating policy problems in case studies, exercises, extra questions, and useful Internet links. The manuals also provide detailed outlines (suitable for use as lecture notes) and solutions to all questions in the textbook.

The Instructor's Manual contains by chapter: a summary, an outline, opening questions, examples for class discussion, teaching tips, extended examples, problems and discussion questions, test your understanding questions, Internet exercises, and tips for classroom experiments.

It also incorporates a Video Guide for the clips available in the Video Library. The guide provide a summary of the clips, running time, teaching notes, and discussion questions, as well as useful tips on how to use the clip in class. Each video is keyed to the appropriate topic in the text.

### **Study Guide**

The Study Guide, prepared by Janice Boucher Breuer of University of South Carolina, emphasizes the practical application of theory. It is a practicum designed to promote comprehension of economic principles and develop each student's ability to apply them to different problems.

The Study Guide contains by chapter: an overview of the corresponding chapter in the textbook, a checklist to provide a quick summary of material covered in the textbook and lectures, a list of key terms, practice exams, and the detailed answer keys. Integrated throughout the Study Guide are Performance Enhancing Tips (PETs), which are designed to help students understand economics by applying the principles and promoting analytical thinking.

Two practice exams, featuring both multiple-choice and essay questions, are included at the end of each chapter. Both exams require students to apply one or more economic principles to arrive at each correct answer. Full solutions to the multiple-choice questions are included, not only listing each correct answer but also explaining in detail why one answer is correct and the others are not. Detailed answers to the essay questions are also provided.

## **Using Experiments, Cases, and Activities in the Classroom, 2/e**

Prepared by Dirk Yandell of the University of San Diego, this manual contains experiments that illustrate topics such as positive vs. normative economics and monopoly. The experiments include tables and charts, in addition to an overview, learning objectives, a list of preparations and materials needed, a detailed What to Do section, an analysis of the results, and questions that require students to interpret and analyze the material.

## **The Wall Street Journal Print and Interactive Editions**

Prentice Hall has formed a strategic alliance with *The Wall Street Journal*, the most respected and trusted daily source for information on business and economics. For a small additional charge, Prentice Hall offers your students a 10-week subscription to The Wall Street Journal print edition and The Wall Street Journal Interactive Edition. Adopting professors will receive a free subscription of both the print and interactive version as well as weekly subject-specific Wall Street Journal educators' lesson plans.

## **The Financial Times Subscription**

We are pleased to announce a special partnership with *The Financial Times*. For schools that adopt a special package including the book and subscription supplement, instructors will receive a complimentary one-year personal subscription and students will receive a 15-week print subscription. Please contact your Prentice Hall representative for details and ordering information.

## **Economist.com Subscription**

Through a special arrangement with Economist.com, upon adoption of the book and subscription supplement package, professors will receive a six-month subscription to the on-line version. Students get a twelve-week subscription to the on-line version. Please contact your Prentice Hall representative for further details and ordering information.

## **A Word Of Thanks**

There is a long distance between the initial vision of an innovative text and the final product. Along the way we participated in a structured process to reach our goal.

We wish to acknowledge the assistance of the many individuals who participated in this process. First we want to thank the participants who took part in the focus groups for the first and second editions of *Economics: Principles and Tools*, they helped us see the manuscript from a fresh perspective:

Carlos Aquilar, El Paso Community  
College

Jim Bradley, University of South  
Carolina

Thomas Collum, Northeastern Illinois  
University

David Craig, Westark College

Jeff Holt, Tulsa Junior College

|  |  |
|--|--|
| Thomas Jeitschko, Texas A & M University | Scanlan Romer, Delta Community College     |
| Gary Langer, Roosevelt University        | Barbara Ross-Pfeiffer, Kapiolani           |
| Mark McCleod, Virginia Polytechnic       | Community College                          |
| Institute and State University           | Virginia Shingleton, Valparaiso University |
| Tom McKinnon, University of Arkansas     | Zahra Saderion, Houston Community          |
| Amy Meyers, Parkland Community           | College                                    |
| College                                  | Jim Swofford, University of South          |
| Hassan Mohammadi, Illinois State         | Alabama                                    |
| University                               | Linda Wilson, University of                |
| John Morgan, College of Charleston       | Texas–Arlington                            |
| Norm Paul, San Jacinto Community         | Janet West, University of                  |
| College                                  | Nebraska–Omaha                             |
| Nampeang Pingkarawat, Chicago State      | Michael Youngblood, Rock Valley            |
| University                               | Community College                          |

Many people read all or parts of the manuscript at various stages. For their helpful criticisms, we thank:

|   |  |
|---|--|
| Christine Amsler, Michigan State            | Albert B. Culver, California State       |
| University                                  | University, Chico                        |
| Karijit K. Arora, Le Moyne College          | Norman Cure, Macomb Community            |
| Alex Azarchs, Pace University               | College                                  |
| Kevin A. Baird, Montgomery County           | Irma de Alonso, Florida International    |
| Community College                           | University                               |
| Donald Balch, University of South           | Sel Dibooglu, Southern Illinois          |
| Carolina                                    | University                               |
| Sheryl Ball, Virginia Polytechnic Institute | Martine Duchatelet, Barry University     |
| and State University                        | Mousumi Duttaray, Indiana University     |
| Mahamudu Bawumia, Baylor University         | Ghazi Duwaji, University of Texas,       |
| Charles Scott Benson Jr. Idaho State        | Arlington                                |
| University                                  | David Eaton, Murray State University     |
| John Payne Bigelow, Louisiana State         | Duane Eberhardt, Missouri Southern       |
| University                                  | State College                            |
| Scott Bloom, North Dakota State             | Carl Enomoto, New Mexico State           |
| University                                  | University                               |
| Janice Boucher Breuer, University of        | David Figlio, University of Florida      |
| South Carolina                              | E.B. Gendel, Woodbury University         |
| Kathleen K. Bromley, Monroe                 | Dan Georgianna, University of            |
| Community College                           | Massachusetts–Dartmouth                  |
| Cindy Cannon, North Harris College          | Linda Ghent, East Carolina University    |
| Katie Canty, Cape Fear Community            | Hossein Gholami, Fayetteville Tech       |
| College                                     | Community College                        |
| David L. Coberly, Southwest Texas State     | Randy R. Grant, Linfield College         |
| University                                  | Paul C. Harris, Jr., Camden County       |
| John L. Conant, Indiana State University    | College                                  |
| Ana-Maria Conley, DeVry Institute of        | James E. Hartley, Mount Holyoke          |
| Technology                                  | College                                  |
| Ed Coulson, Penn State University           | Rowland Harvey, DeVry Institute of       |
| Lee Craig, North Carolina State             | Technology                               |
| University                                  | John Henry, California State University, |
| Peggy Crane, Southwestern College           | Sacramento                               |

|  |  |
|--|--|
| Robert Herman, Nassau Community College                          | Stan Peters, Southeast Community College   |
| Charles W. Haase, San Francisco State University                 | Chirinjev Peterson, Greenville Technical College                                   |
| Charlotte Denise Hixson, Midlands Technical College              | Nampeang Pingkarawat, Chicago State University                                     |
| Jeff Holt, Tulsa Community College                               | L. Wayne Plumly, Jr., Valdosta State University                                    |
| Brad Hoppes, Southwest Missouri State University                 | Dan Rickman, Oklahoma State University   |
| Calvin Hoy, County College of Morris                             | John Robertson, University of Kentucky   |
| Jonathan O. Ikoba, Scott Community College                       | Barbara Ross-Pfeiffer, Kapiolani Community College                                 |
| John A. Jascot, Capital Community Technical College              | George Schatz, Maine Maritime Academy  |
| Thomas Jeitschko, Texas A & M University                         | Kurt Schwabe, University of California, Riverside                                  |
| George Jensen, California State University, Los Angeles          | Mark Siegler, Williams College   |
| Taghi T. Kermani, Youngstown State University                    | Terri Sexton, California State University, Sacramento                              |
| Rose Kilburn, Modesto Junior College                             | Dennis Shannon, Belleville Area College  |
| Philip King, San Francisco State University                      | Virginia Shingleton, Valparaiso University   |
| James T. Kyle, Indiana State University                          | Ed Sorensen, San Francisco State University  |
| Gary Langer, Roosevelt University                                | Abdulwahab Srαιheen, Kutztown University   |
| Susan Linz, Michigan State University                            | James Swofford, University of South Alabama  |
| Marianne Lowery, Erie Community College                          | Evan Tanner, Thunderbird, The American Graduate School of International Management |
| Melanie Marks, Longwood College                                  | Robert Tansky, St. Clair County Community College                                  |
| Jessica McCraw, University of Texas, Arlington                   | Denise Turnage, Midlands Technical College   |
| Thomas J. Meeks, Virginia State University                       | Fred Tyler, Fordham University   |
| Jeannette Mitchell, Rochester Institute of Technology            | James R. VanBeek, Blinn College  |
| Rahmat Mozayan, Heald College                                    | Daniel Villegas, Cal Polytechnic State University                                  |
| William Neilson, Texas A & M University                          | Chester Waters, Durham Technical Community College, Shaw University                |
| Alex Obiya, San Diego City College                               | Irvin Weintraub, Towson State University   |
| Paul Okello, University of Texas, Arlington                      | Donald Wells, University of Arizona  |
| Charles M. Oldham, Jr., Fayetteville Technical Community College | James Wheeler, North Carolina State University                                     |
| Jack W. Osman, San Francisco State University                    | Gilbert Wolfe, Middlesex Community College   |
| Carl Parker, Fort Hays State University                          |  |
| Randall Parker, East Carolina University                         |  |
| Stephen Perez, Washington State University                       |  |

A special acknowledgment goes to the instructors who were willing to class-test drafts of the manuscript in different stages of development. They provided us with instant feedback on parts that worked and parts that needed changes:



John Constantine, University of California,  
Davis  
John Farrell, Oregon State University  
James Hartley, Mt. Holyoke College  
Kailash Khandke, Furman College  
Peter Lindert, University of California,  
Davis

Louis Makowski, University of California,  
Davis  
Stephen J. Perez, Washington State  
University  
Barbara Ross-Pfeiffer, Kapiolani  
Community College

From the start, Prentice Hall provided us with first-class support and advice. PJ Boardman, Josh McClary, Marie McHale, Gladys Soto, and Lisa Amato of Prentice Hall contributed in myriad ways to the project. We want to single out two people for special mention. Our Development Editor, Mike Elia, worked with us patiently to make our prose clean and lively, and our presentation utterly clear. Finally, we are deeply indebted to Rod Banister, Economics Editor at Prentice Hall, who used a combination of great organizational skill and a good sense of humor to guide the project from start to finish.

Last but not least, we must thank our families, who have seen us disappear, sometimes physically and other times mentally, to spend hours wrapped up in our own world of principles of economics. A project of this magnitude is very absorbing, and our families have been particularly supportive in this endeavor.



ARTHUR O'SULLIVAN



STEVEN SHEFFRIN

# Glossary

**Accelerator theory:** The theory of investment that says current investment spending depends positively on the expected future growth of real GDP.

**Adverse-selection problem:** The uninformed side of the market must choose from an undesirable or adverse selection of goods.

**Aggregate demand:** The relationship between the level of prices and the quantity of real GDP demanded.

**Aggregate supply:** The relationship between the level of prices and the quantity of output supplied.

**Appreciation:** An increase in the value of a currency.

**Asian Pacific Economic Cooperation (APEC) organization:** An organization of 18 Asian nations that attempts to reduce trade barriers between their nations.

**Assets:** The uses of the funds of a bank, including loans and reserves.

**Asymmetric information:** One side of the market—either buyers or sellers—has better information about the good than the other.

**Automatic stabilizers:** Taxes and transfer payments that stabilize GDP without requiring policymakers to take explicit action.

**Autonomous consumption spending:** The part of consumption that does not depend on income.

**Average-cost pricing policy:** A regulatory policy under which the government picks the point on the demand curve at which price equals average cost.

**Average fixed cost (AFC):** Fixed cost divided by the quantity produced.

**Balance of payments deficit:** Under a fixed exchange rate system, a situation in which the supply of a country's currency exceeds the demand for the currency at the current exchange rate.

**Balance of payments surplus:** Under a fixed exchange rate system, a situation in which the demand for a coun-

try's currency exceeds the supply of the currency at the current exchange rate.

**Balance sheet:** An account for a bank that shows the sources of its funds (liabilities) as well as the uses for the funds (assets).

**Barter:** Trading goods directly for other goods.

**Board of Governors of the Federal Reserve:** The seven-person governing body of the Federal Reserve system in Washington, DC.

**Budget deficit:** The difference between a government's spending and its revenues from taxation.

**Business cycles:** Another name for economic fluctuations.

**Capital:** See physical capital; see human capital.

**Capital deepening:** Increases in the stock of capital per worker.

**Carbon tax:** A tax based on a fuel's carbon content.

**Cartel:** A group of firms that coordinate their pricing decisions, often by charging the same price.

**Central bank:** A banker's bank; an official bank that controls the supply of money in a country.

**Ceteris paribus:** Latin meaning "other things being equal."

**Chain index:** A method for calculating changes in prices that uses data from neighboring years.

**Change in demand:** A change in the amount of a good demanded resulting from a change in something other than the price of the good; represented graphically by a shift of a demand curve.

**Change in quantity demanded:** A change in the amount of a good demanded resulting from a change in the price of the good; represented graphically by a movement along a demand curve.

**Change in quantity supplied:** A change in the amount of a good supplied resulting from a change in the price

of the good; represented graphically by a movement along a supply curve.

**Change in supply:** A change in the amount of a good supplied resulting from a change in something other than the price of the good; represented graphically by a shift of the supply curve.

**Classical aggregate supply curve:** A vertical aggregate supply curve. It reflects the idea that in the long run, output is determined solely by the factors of production.

**Classical economics:** A school of thought that provides insights into the economy when it operates at or near full employment.

**Command-and-control policy:** A pollution-control policy under which the government commands each firm to produce no more than a certain volume of pollution and controls the firm's production process by forcing the firm to use a particular pollution-control technology.

**Complements:** Two goods for which an increase in the price of one good decreases the demand for the other good.

**Concentration ratio:** A measure of the degree of concentration in a market; the four-firm concentration ratio is the percentage of output produced by the four largest firms.

**Constant-cost industry:** An industry in which the average cost of production is constant, so the long-run supply curve is horizontal.

**Consumer Price Index (CPI):** A price index that measures the cost of a fixed basket of goods chosen to represent the consumption pattern of individuals.

**Consumption expenditures:** Purchases of newly produced goods and services by households.

**Consumption function:** The relationship between the level of income and consumption spending.

**Contractionary policies:** Government policy actions that lead to decreases in output.

**Convergence:** The process by which poorer countries "catch up" with richer countries in terms of real GDP per capita.

**Cost-of-living adjustments:** Automatic increases in wages or other payments that are tied to a price index.

**Countercyclical:** Moving in the opposite direction of real GDP.

**Craft union:** A labor organization that includes workers from a particular occupation, for example, plumbers, bakers, or electricians.

**Creative destruction:** The process by which competition for monopoly profits leads to technological progress.

**Cross elasticity of demand:** A measure of the responsiveness of the quantity demanded to changes in the price of a related good; computed by dividing the percentage change in the quantity demanded of one good (X) by the percentage change in the price of another good (Y).

**Crowding out:** The reduction in investment (or other component of GDP) in the long run caused by an increase in government spending.

**Cyclical unemployment:** The component of unemployment that accompanies fluctuations in real GDP.

**Demand curve:** See *individual demand curve*; see *market demand curve*.

**Demand schedule:** A table of numbers that shows the relationship between price and quantity demanded by a consumer, *ceteris paribus* (other things being equal).

**Depreciation:** The wear and tear of capital as it is used in production.

**Depression:** The common name for a severe recession.

**Devaluation:** A decrease in the exchange rate to which a currency is pegged in a fixed rate system.

**Diminishing returns:** As one input increases while the other inputs are held fixed, output increases but at a decreasing rate.

**Discount rate:** The interest rate at which banks can borrow from the Fed.

**Discouraged workers:** Workers who left the labor force because they could not find jobs.

**Diseconomies of scale:** A situation in which an increase in the quantity produced increases the long-run average cost of production.

**Disposable personal income:** The income that flows back to households, taking into account transfers and taxes.

**Dominant strategy:** An action that is the best choice under all circumstances.

**Double coincidence of wants:** The problem in a system of barter that one person may not have what the other desires.

**Duopolists' dilemma:** A situation in which both firms would be better off if they both chose a high price but each chooses a low price.

**Durable goods:** Goods that last for a long period of time, such as household appliances.

**Economic cost:** Explicit costs plus implicit costs.

**Economic fluctuations:** Movements of GDP above or below normal trends.

**Economic growth:** Sustained increases in the real production of an economy over a period of time.

**Economic profit:** Total revenue minus the total economic cost.

**Economics:** The study of the choices made by people who are faced with scarcity.

**Economies of scale:** A situation in which an increase in the quantity produced decreases the long-run average cost of production.

**Employed:** People who have jobs.

**Entrepreneur:** A person who has an idea for a business and coordinates the production and sale of goods and services, taking risks in the process.

**Entrepreneurship:** Effort used to coordinate the production and sale of goods and services.

**Equilibrium output:** The level of GDP at which the demand for output equals the amount that is produced.

**Euro:** The common currency in Europe.

**European Union (EU):** An organization of European nations that has reduced trade barriers within Europe.

**Excess reserves:** Any additional reserves that a bank holds above required reserves.

**Exchange rate:** The rate at which currencies trade for one another in the market.

**Expansionary policies:** Government policy actions that lead to increases in output.

**Expectations of inflation:** The beliefs held by the public about the likely path of inflation for the future.

**Expectations Phillips curve:** The relationship that describes the links between inflation and unemployment, taking into account expectations of inflation.

**Expected real interest rate:** The nominal interest rate minus the expected inflation rate.

**Explicit costs:** The firm's actual cash payments for its inputs.

**Export:** A good produced in the home country (for example, the United States) and sold in another country.

**External benefit:** Another term for spillover benefit.

**External cost:** Another term for spillover cost.

**Factors of production:** Labor and capital used to produce goods and services.

**Federal funds market:** The market in which banks borrow and lend reserves to and from one another.

**Federal Open Market Committee (FOMC):** The group that decides on monetary policy; it consists of the 7 members of the Board of Governors plus 5 of 12 regional bank presidents on a rotating basis.

**Federal Reserve Banks:** One of 12 regional banks that are an official part of the Federal Reserve System.

**Financial intermediaries:** Organizations that receive funds from savers and channel them to investors.

**Financial liberalization:** The opening of financial markets to participants from foreign countries.

**Fixed costs:** Costs that do not change as the level of activity changes.

**Fixed exchange rates:** A system in which governments peg exchange rates.

**Flexible exchange rates:** A currency system in which exchange rates are determined by free markets.

**Foreign exchange market intervention:** The purchase or sale of currencies by governments to influence the market exchange rate.

**Franchise or licensing scheme:** A policy under which the government picks a single firm to sell a particular good.

**Free-rider problem:** Each person will try to get the benefit of a public good without paying for it, trying to get a free ride at the expense of others who do pay.

**Frictional unemployment:** The part of unemployment associated with the normal workings of the economy, such as searching for jobs.

**Full employment:** The level of employment that occurs when the unemployment rate is at the natural rate.

**Game tree:** A graphical representation of the consequences of different strategies.

**GDP deflator:** An index that measures how the price of goods included in GDP changes over time.

**General Agreement on Tariffs and Trade (GATT):** An international agreement that has lowered trade barriers between the United States and other nations.

**Government purchases:** Purchases of newly produced goods and services by all levels of government.

**Gross domestic product (GDP):** The total market value of all the final goods and services produced within an economy in a given year.

**Gross investment:** Actual investment purchases.

**Gross national product (GNP):** GDP plus net income earned abroad.

**Growth accounting:** A method to determine the contribution to economic growth from increased capital, labor, and technological progress.

**Growth rate:** The percentage rate of change of a variable.

**Guaranteed price matching:** A scheme under which a firm guarantees that it will match a lower price by a competitor; also known as a meet-the-competition policy.

**Household:** A group of related family members and unrelated individuals who live in the same housing unit.