

# Micro- Economics



T W E L F T H   E D I T I O N

CAMPBELL R. McCONNELL  
STANLEY L. BRUE



# **MICRO- ECONOMICS**

**Principles, Problems,  
and Policies**

TWELFTH EDITION

**Campbell R. McConnell**

Professor of Economics, Emeritus  
University of Nebraska—Lincoln

**Stanley L. Brue**

Professor of Economics  
Pacific Lutheran University

**McGraw-Hill, Inc.**

New York	St. Louis	San Francisco	Auckland	
Bogotá	Caracas	Lisbon	London	Madrid
Mexico	Milan	Montreal	New Delhi	Paris
San Juan	Singapore	Sydney	Tokyo	Toronto

## Microeconomics: Principles, Problems, and Policies

Copyright © 1993, 1990 by McGraw-Hill, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

4 5 6 7 8 9 0 VNH VNH 9 0 9 8 7 6 5 4

ISBN 0-07-045617-8

This book was set in Century Oldstyle by York Graphic Services, Inc.  
The editors were Scott D. Stratford, Michael R. Elia, and Edwin Hanson;  
the designer was Joseph A. Piliero;  
the production supervisor was Annette Mayeski.  
New drawings were done by Vantage Art.  
Von Hoffmann Press, Inc., was printer and binder.

### Photo Credits

10: Jan Staller/The Image Works 32: AP/Wide World 63: Mike Maples/Woodfin Camp & Associates 84: Montes De Oca/FPG International 108: Larry Mulvehill/Science Source/Photo Researchers 124: Ormand Gigli/The Stock Market 131: William Curtsinger/Photo Researchers 156: John Madere/The Stock Market 182: Blaine Harrington III/The Stock Market 204: Jonathon Blair/Woodfin Camp & Associates 216: Debra P. Hershkowitz 236: Joel Gordon 252: FPG International 270: John Clark/The Stock Market 285: Bob Pizaro/Comstock 298: Hulton/Bettmann Newsphotos 320: Comstock 323: Wally McNamee/Woodfin Camp & Associates 358: Jon Feingersh/The Stock Market 340: Bettmann Newsphotos 374: Joel Gordon 393: Will & Demi McIntyre 416: Tim Davis/Photo Researchers 421: Michael A. Keller/The Stock Market 440: R. Michael Stuckey/Comstock 482: Andy Hernandez/SIPA Press

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

McConnell, Campbell R.

Microeconomics: principles, problems, and policies / Campbell R. McConnell, Stanley L. Brue.—12th ed.

p. cm.

Includes index.

ISBN 0-07-045617-8

1. Microeconomics. I. Brue, Stanley L., (date). II. Title.

HB172.M3925 1993

338.5—dc20

92-17817



## ABOUT THE AUTHORS

---

**Campbell R. McConnell** earned his Ph.D. from the University of Iowa after receiving degrees from Cornell College and the University of Illinois. He taught at the University of Nebraska—Lincoln from 1953 until his retirement in 1990. He is also coauthor of *Contemporary Labor Economics*, 3d ed. (McGraw-Hill) and has edited readers for the principles and labor economics courses. He is a recipient of both the University of Nebraska Distinguished Teaching Award and the James A. Lake Academic Freedom Award, and is past-president of the Midwest Economics Association. His primary areas of interest are labor economics and economic education. He has an extensive collection of jazz recordings and enjoys reading jazz history.

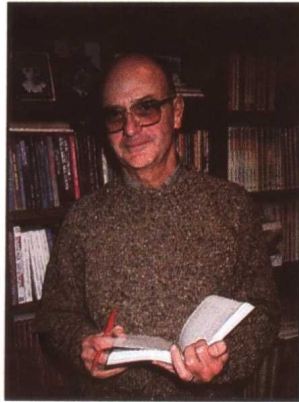


Photo by: Curt McConnell

**Stanley L. Brue** did his undergraduate work at Augustana College (S.D.) and received his Ph.D. from the University of Nebraska—Lincoln. He teaches at Pacific Lutheran University, where he has been honored as a recipient of the Burlington Northern Faculty Achievement Award for classroom excellence and professional accomplishment. He is national President-elect and member of the International Executive Board of Omicron Delta Epsilon International Honor Society in Economics. Professor Brue is coauthor of *Economic Scenes: Theory in Today's World*, 5th ed. (Prentice-Hall); *The Evolution of Economic Thought*, 4th ed. (Harcourt Brace Jovanovich); and *Contemporary Labor Economics*, 3d ed. (McGraw-Hill). For relaxation, he enjoys boating on Puget Sound and skiing trips with his family.

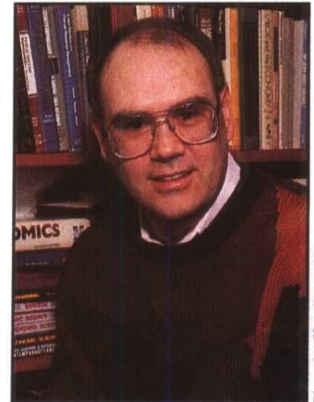


Photo by: Ken Dunmire



## P R E F A C E

---

The publication of the twelfth edition of *Economics* (and its accompanying editions of *Macroeconomics* and *Microeconomics*) follows the most successful edition of this book to date. Naturally, we are pleased that *Economics* continues to be the best selling economics text in the United States. Moreover, we are pleasantly surprised that the Russian translation of *Economics* will soon be the leading economics text in the former Soviet Union; Politizdat Press has taken orders for nearly 500,000 copies. This fact dramatizes how remarkable these times are for teaching and learning economics! The message of our day is clear: People who comprehend economic principles will have a great advantage functioning in, and making sense of, the emerging world. We express our sincere thanks to each of you using *Microeconomics* for granting us a modest role in your efforts to teach or learn this globally important subject.

### THE REVISION

This edition of *Microeconomics* has been thoroughly revised, polished, and updated. Many of the changes have been motivated by the comments of 36 reviewers and another 13 participants in focus groups. We are especially grateful to these scholars and acknowledge them by name at the end of this preface.

We strive only for an overview of the changes in this edition here; chapter-by-chapter details are provided in the *Instructor's Resource Manual* accompanying this book.

### Consolidation of Introductory Chapters

Responding to reviewer suggestions, we have reduced the number of introductory chapters from eight to six, allowing for a quicker start into microeconomic theory. The previous edition's Chapters 5 and 7 are consoli-

dated into new Chapter 5 and old Chapters 6 and 8 are combined into new Chapter 6. Parts of the material on taxation in old Chapter 8 are now found in new Chapter 19, which treats public choice and tax analysis. We have resisted the temptation to compress the introductory material even further, believing that most students inadequately understand the characteristics of capitalism (Chapter 3), the functioning of the market system (Chapter 5), and the extensive role of government in the modern economy (Chapter 6). A strong introduction helps students understand and apply microeconomic theory. We believe we have provided such an introduction, but now in a more expeditious form.

### New Topics and Analysis

Much attention has been given to applying economics to the major issues of our day. Also, this edition contains new formal economic analyses. Examples of new discussions and analyses include:

- **Early introduction of comparative advantage theory.** In an optional new section in Chapter 3, we use production possibilities tables to illustrate comparative advantage. By combining this new material with Chapter 4's optional discussion of exchange rates, instructors can effectively introduce international economics early in the course.
- **Economics and the environment.** Chapter 18 is a new chapter on government and market failure. This chapter extends Chapter 6's discussion of externalities by examining the Coase theorem, liability rules and lawsuits, markets for externality rights, and society's optimal amount of externality abatement. A case study of pollution examines the dimensions, causes, and solutions of this problem. Special attention is given to the Superfund law, the Clean Air Act of 1990, and solid waste disposal and recycling.
- **Economics of information.** A lengthy new section of Chapter 18 looks at market failure associated with inadequate information by buyers about sellers



and by sellers about buyers. Topics such as adverse selection and moral hazard are included here. Also, Chapter 12's discussion of advertising is completely rewritten to highlight advertising's informational role. The idea of imperfect information in decision making is introduced *early* in the book; Chapter 1's Last Word uses the economic perspective to analyze how customers decide which fast-food line to enter.

- **Strategic behavior.** Game theory—specifically the prisoner's dilemma model—is presented in the discussion of oligopoly (Chapter 13). Also, Chapter 24 contains a discussion of strategic international trade policy.

- **Public choice and tax analysis.** A full chapter (Chapter 19) is devoted to public choice and tax analysis. Also, we have placed much more emphasis on public choice theory in our explanation of the persistence of agricultural subsidies in Chapter 21, a chapter which has been extensively revised and updated.

- **Principal-agent problem and pay for performance.** A new section of the chapter on wage determination (Chapter 15) explains the principal-agent problem and discusses pay for performance plans (piece rates, commissions and royalties, bonuses and profit sharing), seniority pay, and efficiency wages.

- **The economics of an aging American population.** Chapter 17 on general equilibrium traces the myriad implications of an aging American population.

- **Soviet economy in transition.** A completely rewritten chapter (Chapter 26) presents an up-to-date, thorough analysis of the present crisis and reform efforts in the former Soviet Union.

- **Other new discussions.** There are numerous other new discussions in this edition, a few examples being: cross and income elasticities; rent controls; the absence of a monopoly supply curve; the Herfindahl index; growing inequality in the distribution of income; consolidation in the airline industry; immigration reform; world trade and farm policy; the Farm Act of 1990; the economic impact of import quotas; the proposed North American free-trade zone; Uruguay Round negotiations; and the purchasing power parity theory of exchange rates.

## New Last Words

Reviewers indicate that they appreciate the Last Word minireadings and their placement toward the conclusion of each chapter. These selections serve several purposes: Some provide current or historical real-world applications of economic concepts; others reveal

human-interest aspects of economic problems; and still others present economic concepts or issues in a global context. Thirteen Last Words are new and others have been extensively revised and updated.

We have selected Last Word topics that are both highly relevant to the chapter's discussion *and* interesting to the reader. New topics are: fast-food lines viewed from the economic perspective (Chapter 1); the impact of Operation Desert Storm on Iraqi production possibilities (Chapter 2); the increasing use of barter (Chapter 3); the effect of supply interdiction on the price of marijuana (Chapter 4); the market for health care (Chapter 7); monopoly in the national parks (Chapter 11); product differentiation and nonprice competition in the market for economics textbooks (Chapter 12); the market for "lemons" (Chapter 18); the special interest effect as reflected in the Tax Reform Act of 1986 (Chapter 19); causes of greater income inequality (Chapter 22); possible discrimination in professional basketball (Chapter 23); the difficulties of "buying American" when many product components are imported (Chapter 25); and an obituary of the Soviet Union (Chapter 26).

## Pedagogical Improvements

The principles course has become increasingly demanding for students. Globalization of economies, developments in economic theory, and modern economic problems have added new, sometimes complex material to the course. Concise and understandable explanations are more important than ever before. Accordingly, we have directed much effort toward improving the pedagogy of *Microeconomics*. We have "gone back to the basics," attempting to bolster what we believe to be this book's comparative advantages: its readability and accessibility. Examples of our pedagogical changes include:

- **Quick Reviews within each chapter.** Two or three new reviews within the body of each chapter allow the student to pause and ponder key points. We believe these Quick Reviews will also help students as they study for examinations.

- **Key Graphs.** Students often have a difficult time distinguishing which of the hundreds of graphs in economics are of fundamental importance. To direct students' attention to the essential graphs, we have designated 14 figures as Key Graphs. These graphs are specially designed and labeled to make them easily identifiable. Figures 2-1 and 4-5 are representative. A complete listing of the Key Graphs can be found in the Brief Table of Contents on page ix-x.

- **Motivational introductions.** In many chapters new introductions are added to stimulate reader interest in the chapter's contents. These introductions relate to students' everyday experiences and observations. The opening material for Chapters 2, 6, 8, 16, and 24 is illustrative.
- **Full-color layout.** The full range of colors in the designer's palette makes for a more interesting text and is used functionally to clarify many graphs and diagrams.
- **Functional use of color photos.** Unobtrusive chapter-opening photos are employed as "teasers" for the content of the Last Words, where larger photos are found. The front and back photos visually unite the beginning and ends of the chapters and are designed to spark reader interest in the Last Words.
- **Shorter paragraphs.** In keeping with trends in popular and academic publishing, we have shortened scores of long paragraphs.
- **Tighter sentences.** The two authors and a talented McGraw-Hill editor scrutinized every sentence in the book for unnecessary verbiage. Collectively, we were able to tighten hundreds of sentences without altering the overall style of writing. In economizing on words, we were careful *not* to reduce the thoroughness of our explanations. Where needed, the "extra sentence of explanation" remains a distinguishing characteristic of *Microeconomics*.
- **Numbered lists and added subheads.** We have substituted numbered and labeled lists for verbal strings of "First," "Second," and "Third." The idea here is to break material into smaller parcels to help students more readily retain the content. Similarly, we have used subheads more liberally so the organizational structure of each chapter and topic will be clearer for readers.
- **Footnote deletion.** We have significantly reduced the number of footnotes. Several lengthy explanatory footnotes have been deleted; a number of shorter footnotes have been integrated into the text. Footnotes suggesting additional reading have been judiciously pruned.
- **Added labeling in graphs.** Taking great care to avoid clutter, in a number of cases we have added labeling in figures to help guide the reader through the analysis. These labels are set in strong type so they are highly readable both within the book and on transparencies.
- **New diagrams.** Some of the added diagrams depict new graphical analyses such as the possible effects of advertising on demand and marginal revenue curves (Chapter 13), the economics of recycling (Fig-

ure 18-4), and a comparison of the effects of tariffs and quotas (Figure 24-3). Other new diagrams should help students visualize the interrelations of the concepts involved. Examples of these diagrams are Figures 12-2, 19-1, and 20-1.

- **Clarified explanations of difficult subject matter.** We have continued to look for ways to explain difficult material more clearly. Even minor improvements in language or labeling of graphs can often help students better understand the material. Improvements of this sort have been made in numerous places throughout the text. Good examples are our revised discussions of efficiency (Chapter 2), the relationship between the demand curve and total revenue (Chapter 11), the efficiency effects of oligopoly (Chapter 13), and efficiency losses of taxes (Chapter 19).

## New and Enhanced Ancillaries

The ancillaries in this edition's package are discussed later in this Preface, but three new items are noteworthy.

- **Test Bank III.** New to the *Microeconomics* package is a test bank allowing an alternative testing approach to the predominantly multiple-choice questions in Test Banks I and II. Written by Professors William Walstad and Joyce Gleason, Test Bank III contains questions that emphasize "constructive response" concepts. Students are more actively involved in creating answers to these questions, which provide a valuable alternative to conventional test questions.
- **Augmented Test Bank I.** We have added approximately 1200 questions to the microeconomic version of Test Bank I.
- **Revised software.** The successful *Concept Master* software introduced with the previous edition has been completely updated. This software is directly tied to the contents of *Microeconomics*.

We trust that the outcome of this detailed revision effort is a text and package that are clearly superior to their predecessors.

## FUNDAMENTAL GOALS

The basic purpose of *Microeconomics* continues to be to introduce the beginning economics student to those principles essential to an understanding of the fundamental economic problem and the policy alternatives available for dealing with this problem. We hope that

the ability to reason accurately and objectively about economic matters and the development of a lasting interest in economics will be two valuable by-products of this basic objective. Our intention remains to present the principles and problems of economics in a straightforward, logical fashion. To this end, we continue to put great stress on clarity of presentation and on logical organization.

## PRODUCT DIFFERENTIATION

This text embraces a number of features which perhaps distinguish it from other books in the field.

- **Comprehensive explanations at an appropriate level.** We have attempted to craft a comprehensive, analytical text that is challenging to better students, yet accessible—with appropriate hard work—to average students. We think the thoroughness and accessibility of *Microeconomics* enables the instructor to select topics for special classroom emphasis with confidence that students can independently read and comprehend other assigned material in the book.

- **Comprehensive definition of economics.** The principles course sometimes fails to provide students with a comprehensive and meaningful definition of economics. To avoid this shortcoming, all of Chapter 2 is devoted to a careful statement and development of the economizing problem and an exploration of its implications. This foundation should help put the many particular subject areas of economics in proper perspective.

- **Early integration of international economics.** Comparative advantage is discussed in detail in Chapter 3, exchange rates are explained as an application of supply and demand in Chapter 4, and the international trade sector of the American economy is highlighted in Chapter 5. This strong introduction to international economics permits “globalization” of later discussions of microeconomics, where appropriate. The Table of Contents highlights sections in all chapters with substantial global content.

- **Early treatment of government.** For better or worse, government is an integral component of modern capitalism. Its economic role, therefore, should not be treated piecemeal or as an afterthought. This text introduces the economic functions of government early and accords them systematic treatment in Chapter 6. Chapter 18 examines government and market failure in further detail and

Chapter 19 looks at salient facets of public choice theory and public finance. Also, this text has several problem- and policy-oriented chapters in which government’s role is explored.

- **Resurgence of the market system.** Economies the world over are making the difficult transition from planning to markets. Our emphasis on general equilibrium analysis and the market *system* is thus even more relevant in this edition than in the prior one. A major portion of Chapter 5 is devoted to the interrelationships within the market system, and Chapter 17 explicitly outlines the nature and significance of general equilibrium analysis.

- **Emphasis on the theory of the firm.** We have purposely given much attention to the theory of the firm for two reasons: First, marginal analysis is difficult for most beginning students. Short expositions usually compound these difficulties by raising more questions than they answer. Second, we have coupled analysis of the various market structures with a discussion of the impact of each market arrangement on price, output levels, resource allocation, and the rate of technological advance.

- **Chapters on economic issues.** As most students see it, Part 3 on micro-oriented problems is where the action is. We have sought to guide the action along logical lines through the application of appropriate analytical tools. Our bias in these parts is in favor of inclusiveness; each instructor can effectively counter this bias by omitting those chapters felt to be less relevant for a particular group of students.

## ORGANIZATION AND CONTENT

We believe that the basic prerequisite of an understandable economics text is the logical arrangement and clear exposition of subject matter. This book has been organized so that the exposition of each particular topic and concept is directly related to the level of difficulty which in our experience the average student is likely to encounter. For this reason the relationship between production analysis and cost curves, price-output decisions of firms, and analysis of resource markets are given comprehensive and careful treatments. Simplicity here is correlated with comprehensiveness, not brevity. A three-step development of basic analytical tools is employed: (1) verbal descriptions and illustrations; (2) numerical examples; and (3) graphical presentation based on these numerical illustrations.




The material in this book is organized into four basic parts. They are: Part 1: An Introduction to Economics and the Economy; Part 2: Microeconomics of Product and Resource Markets; Part 3: Government and Current Economic Problems; and Part 4: International Economics and the World Economy. The Table of Contents lists the specific chapters in each part and details the contents within each chapter.

## STUDENT FRIENDLY: STUDY AIDS

*Microeconomics* is highly student oriented.

- 1 Students who are comfortable with graphical analysis and a few related quantitative concepts are in an advantageous position to understand principles of economics. With this in mind, an appendix to Chapter 1 carefully reviews graphing, line slopes, and linear equations.
- 2 The introductory paragraphs of each chapter state objectives, present an organizational overview of the chapter, and relate the chapter to what has been covered before and what will follow.
- 3 Because a significant portion of any introductory course is devoted to terminology, terms are given special emphasis. In particular, each important term is in **boldface type** where it first appears in each chapter. We have tried to make all definitions clear and succinct. At the end of each chapter all new terms are listed in the "Terms and Concepts" section. Finally, at the end of the book is a comprehensive glossary. This glossary also is contained in the *Study Guide* which accompanies *Microeconomics*.
- 4 As we noted earlier, each chapter contains two or three "Quick Reviews" at appropriate places in the chapter to reinforce key points for students and help them study for examinations.
- 5 Figures worthy of intensive study are given special design treatment and designated as "Key Graphs."
- 6 The legends accompanying all diagrams are written so they are self-contained analyses of the relevant concepts shown. This is a strategic means of reinforcing student comprehension.
- 7 Much thought has gone into the end-of-chapter questions. Though purposely intermixed, the questions are of three general types. Some are designed to highlight the main points of each chapter. Others are "open-end" discussion, debate, or thought questions. Wherever pertinent, numerical problems which re-

quire the student to derive and manipulate key concepts and relationships are employed. Numerical problems are stressed in those chapters which deal with analytical material. Some optional "advanced analysis" questions accompany certain theory chapters. These problems usually involve the stating and manipulation of certain basic concepts in equation form. Answers to *all* end-of-chapter questions—both quantitative and essay—are provided in the *Instructor's Resource Manual*.

8 Many of the end-of-chapter questions deal with subject matter that is reinforced by the excellent computerized tutorial, *Concept Master II*, that accompanies the text. A floppy disk symbol  appears in conjunction with questions whose content correlates to the tutorial program.

9 In addition to its considerable esthetic merit, the multicolor format of *Microeconomics* stresses the use of color so students will more quickly and easily perceive the ideas expressed in each diagram and chart.

## INSTRUCTOR FRIENDLY: THE SUPPLEMENTS

*Microeconomics* is accompanied by supplements which we feel equal or surpass competing texts in terms of both quantity and quality.

### Study Guide

Professor William Walstad has prepared a new revision of the *Study Guide* to accompany *Microeconomics* which many students find to be an indispensable aid. It contains for each chapter an introductory statement, a checklist of behavioral objectives, an outline, a list of important terms, fill-in questions, problems and projects, objective questions, and discussion questions. The glossary found at the end of *Microeconomics* also appears in the *Study Guide*.

In this revision, Professor Walstad has added text page references for every question (true-false, multiple-choice, and discussion); has extensively revised the chapter learning objectives to add more detail; and has added discussion sections to the chapter outlines. He has also increased the number of multiple-choice questions for each chapter, and has increased the number of problems and projects for further study. The *Guide* comprises, in our opinion, a superb "portable tutor" for the principles student.

## Economic Concepts

*Economic Concepts* provides carefully designed programmed materials for all the key analytical areas of the principles course. Revised by Professor W. H. Pope for use with *Microeconomics*, it can be used as an effective supplement with any mainstream text.

## Instructor's Resource Manual

Professor Joyce Gleason of Nebraska Wesleyan University has revised and updated the *Instructor's Resource Manual*. It comprises chapter summaries, listings of "what's new" in each chapter, teaching tips and suggestions, learning objectives, chapter outlines, data and visual aid sources with suggestions for classroom use, and questions and problems. Answers to all the text's end-of-chapter questions are also found in the *Manual*.

The new edition of the *Manual* includes a full, chapter-by-chapter overview of all changes in the revision. Also, the chapter outlines have been consolidated into a separate section of the *Manual*, so they can more readily be used as a resource in classroom lectures. We think instructors will find this *Manual* useful and time-saving.

Available again in this edition is a computerized version of the *Manual*, suitable for use with IBM-PC computers, IBM-PC compatibles, and Macintosh computers. The version for IBM-PCs and compatibles is available in both 5½-inch and 3½-inch formats. Users of *Microeconomics* can now print out portions of the *Manual's* contents, complete with their own additions or alterations, for use as student handouts or in whatever ways they might wish. This capability includes printing answers to all end-of-chapter questions.

As with the *Study Guide*, a separate edition of the *Instructor's Resource Manual* has been prepared to correspond with the paperback edition of the text. Users of *Economics* or *Microeconomics* will find that the material in the accompanying *Manual* correlates with the chapter sequencing in the text.

## Three Test Banks

*Microeconomics* is supplemented by two test banks of objective, predominantly multiple-choice, questions and a new test bank of short essay and problem-type questions.

*Test Bank I* now comprises over 2900 questions, all written by the text authors; approximately 2200 are car-

ried over from the previous edition and 700 have been prepared by the authors for the new edition.

*Test Bank II*, revised by Professor Walstad, contains approximately 2300 questions. For all test items in these two test banks, the nature of each question is identified (e.g., G, graphical; C, complex analysis) as are the pages in the text containing the material which is the basis for each question. Also, each chapter in *Test Banks I* and *II* has an outline or table of contents which groups questions by topics.

New to this edition, *Test Bank III* will emphasize "constructive response" testing to evaluate student understanding in a manner different from conventional multiple-choice and true-false questions. Prepared by Professors Walstad and Gleason, this unique resource emphasizes short-answer and essay questions designed to enhance critical thinking skills.

Adopters of *Microeconomics* will be able to use this sizable number of questions, organized into three test banks of equal quality, with maximum flexibility. The fact that the text authors and *Study Guide* authors have prepared all the test items will assure the fullest possible correlation with the content of the text.

As with the *Study Guide* and *Instructor's Resource Manual*, a separate version of the test banks has been prepared to correspond with *Microeconomics*.


**Computerized testing** *Test Banks I, II, and, III* are available in computerized versions, as well as print. Computerized test generation will be available for IBM-PCs and compatibles, and for Macintosh computers. All these systems include the capability to produce high-quality graphics from the test banks.

These systems will also feature the ability to generate multiple tests, with versions "scrambled" to be distinctive, and will have other useful features. They will meet the various needs of the widest spectrum of computer users.

**Color transparencies** Full color transparencies for overhead projectors have been prepared especially for *Microeconomics*. These encompass all the figures which appear in *Microeconomics* and are available on request to adopters.

**Student software** For users of IBM-PCs and compatibles, a student software package *Concept Master II*, has been prepared by Professor William Gunther of the University of Alabama and Irene Gunther. The previous version of this software was widely praised by its users, and it has been improved to provide even more

flexibility. It provides the most extensive and varied computer-assisted study material of any software package available.

Over twelve graphics-based tutorial programs provide an opportunity for students to study key topics in the book in an interactive fashion. The tutorial programs are linked to the text. Selected end-of-chapter questions that relate to the content of one of the tutorial programs are highlighted by a floppy disk symbol . The questions themselves are not necessarily contained within the tutorial program, but the tutorial does contain material that relates directly to the concepts underlying the highlighted questions.

In addition to the tutorial programs, students can quiz themselves with a self-testing program accompanying each test chapter. The package also features three microeconomic simulation games. Some of the simulations are elementary, and others are more complex. Wherever possible, they include a global perspective. Also included in the package are a list of key terms, a pop-up calculator for computations, and a section that uses the “Key Graphs” in the text to direct students to the appropriate tutorial lesson.

For users of Macintosh computers, there is an exciting tutorial program, *DiscoverEcon*. Developed by Professors Gerald Nelson and Wesley Seitz of the University of Illinois, this innovative package uses Apple’s HYPERCARD programming environment to produce an extremely interactive learning experience. Dynamic shifts of curves, screen animation, sound effects, and simple-to-use command keys are features of this program.

**Videodisks** New to this edition are videodisks designed to harness this exciting new technology for classroom presentation. These videodisks offer an array of graphical illustrations of key economic concepts to further student understanding.

**Videos** New videotape materials have been assembled for this edition, to illustrate fundamental concepts and economic issues in a manner that will be equally effective in classroom settings or media resource centers. Among these materials is the new “MacNeil/Lehrer Quarterly Report on Economics”, an exciting new series of excerpts from the acclaimed PBS news program, “The MacNeil/Lehrer Newshour”. Your local McGraw-Hill representative can provide details on all new video ancillaries for the text.

## DEBTS

The publication of this edition of *Microeconomics* will extend the life of *Economics* well into its fourth decade. The acceptance of *Economics*, which was generous from the outset, has expanded with each edition. This gracious reception has no doubt been fostered by the many teachers and students who have been kind enough to provide their suggestions and criticisms.

Our colleagues at the University of Nebraska—Lincoln and Pacific Lutheran University have generously shared knowledge of their specialties with us and have provided encouragement. We are especially indebted to Professors Harish Gupta, Jerry Petr, David Rosenbaum, and Norris Peterson, who have been most helpful in offsetting our comparative ignorance in their areas of specialty.

As indicated, this edition has benefited from a number of perceptive reviews. In both quantity and quality, they provided the richest possible source of suggestions for this revision. These contributors are listed at the end of this Preface.

Professors Thomas P. Barbiero and W. H. Pope of Ryerson Polytechnical Institute in their role as coauthors of the Canadian edition of *Economics* have provided innumerable suggestions for improvement. Thanks also go to Professor Lovewell who coded the new *Test Bank* items by type of questions and identified the corresponding text page number for all the items.

We are greatly indebted to the many professionals at McGraw-Hill—and in particular Phil Galea, Annette Mayeski, and Karen Jackson—for their expertise in the production and distribution of the book. Joe Piliero has given the book its unique design. Safra Nimrod and Debra Hershkowitz found suitable photos for the Last Word readings, and Cathy Hull provided the creative illustrations for several of them. Margaret Hanson’s imaginative editing has been invaluable. Our greatest debts are to Scott Stratford, Edwin Hanson, and Mike Elia for their conscientious supervision of this revision. Their patience and many positive contributions are gratefully acknowledged.

Given this much assistance, we see no compelling reason why the authors should assume full responsibility for errors of omission or commission. But we bow to tradition.

Campbell R. McConnell  
Stanley L. Brue



## ACKNOWLEDGMENTS

---

**We thank the following instructors for their written reviews and other comments, which greatly helped shape this edition:**

Thomas P. Barbiero, *Ryerson Polytechnical Institute*  
Arleigh T. Bell, *Loyola College*  
Michael S. Blair, *Tarrant County Junior College*  
Joseph P. Cairo, *La Salle University*  
Robert Campbell, *Indiana University–Bloomington*  
Gordon Crocker, *Community College of Allegheny County*  
Paul G. Farnham, *Georgia State University*  
Walter F. Gall, Jr., *Northeastern Junior College*  
John A. Gould, *Garrett Community College*  
Paul W. Grimes, *Mississippi State University*  
Richard C. Harmstone, *Pennsylvania State University*  
Gail A. Hawks, *Miami-Dade Community College*  
R. Bradley Hoppes, *Southwest Missouri State University*  
Matthew Hyle, *Winona State University*  
Patrick Joyce, *Michigan Technological University*  
James C. Koch, *St. Edwards University*  
Fredric Kolb, *University of Wisconsin–Eau Claire*  
Patrick Litzinger, *Robert Morris College*  
Mark Lovewell, *Ryerson Polytechnical Institute*  
George F. Muscat, *Camden County Community College*  
Asghar Nazemzadeh, *University of Houston–Downtown*  
Margaret O'Donnell, *University of Southwest Louisiana*  
Ronald W. Olive, *New Hampshire College*  
Diana Petersdorf, *University of Wisconsin–Stout*

David Priddy, *Piedmont Community College*  
John J. Rapczak, *Community College of Rhode Island*  
Theresa Riley, *Youngstown State University*  
Peter Rupert, *SUNY–Buffalo*  
Doris Sheets, *Southwest Missouri State University*  
Steven P. Skinner, *Western Connecticut State University*  
Robert Stuart, *Rutgers University*  
Percy O. Vera, *Sinclair Community College*  
Howard J. Wall, *West Virginia University*  
Paul R. Watro, *Jefferson Community College*  
Peter J. Watry, Jr., *Southwestern College*  
Dieter Zschock, *SUNY–Stony Brook*

**In addition, we thank the following instructors for participating in focus group sessions, which served as very useful complements to the reviewing process:**

Barbara Brogan, *Northern Virginia Community College*  
Robert F. Brooker, *Gannon University*  
Christopher B. Colburn, *Old Dominion University*  
Jacob Deutch, *University of Maryland–Baltimore County*  
James Halteman, *Wheaton College*  
Charles Jewell, *Charles County Community College*  
George Kosicki, *College of the Holy Cross*  
Patrick Litzinger, *Robert Morris College*  
Craig MacPhee, *University of Nebraska–Lincoln*  
Norris A. Peterson, *Pacific Lutheran University*  
Donald Schilling, *University of Missouri–Columbia*  
Robert Tansky, *St. Clair Community College*  
Irvin Weintraub, *Towson State University*



# CONTENTS IN BRIEF

---

Preface *xvii*  
Acknowledgments *xxv*

## PART 1

### AN INTRODUCTION TO ECONOMICS AND THE ECONOMY

- 1 The Nature and Method of Economics 1
- 2 The Economizing Problem 19
- 3 Pure Capitalism and the Circular Flow 35
- 4 Understanding Individual Markets: Demand and Supply 47
- 5 The Private Sectors and the Market System 67
- 6 The Public Sector 88

## PART 2

### MICROECONOMICS OF PRODUCT AND RESOURCE MARKETS

- 7 Demand and Supply: Elasticities and Applications 105
- 8 Consumer Behavior and Utility Maximization 124
- 9 The Costs of Production 140
- 10 Price and Output Determination: Pure Competition 160
- 11 Price and Output Determination: Pure Monopoly 187
- 12 Price and Output Determination: Monopolistic Competition 207
- 13 Price and Output Determination: Oligopoly 220
- 14 Production and the Demand for Resources 240
- 15 The Pricing and Employment of Resources: Wage Determination 255

- 16 The Pricing and Employment of Resources: Rent, Interest, and Profits 275
- 17 General Equilibrium: The Market System and Its Operation 290

## PART 3

### GOVERNMENT AND CURRENT ECONOMIC PROBLEMS

- 18 Government and Market Failure: Public Goods, the Environment, and Information Problems 303
- 19 Public Choice Theory and Taxation 323
- 20 Antitrust and Regulation 343
- 21 Agriculture: Economics and Policy 362
- 22 Income Inequality and Poverty 378
- 23 Labor Market Issues: Unionism, Discrimination, and Immigration 396

## PART 4

### INTERNATIONAL ECONOMICS AND THE WORLD ECONOMY

- 24 International Trade: Comparative Advantage and Protectionism 421
- 25 Exchange Rates, the Balance of Payments, and Trade Deficits 444
- 26 The Soviet Economy in Transition 469

Glossary *G1*

Index *I1*

## KEY GRAPHS

- 2-1 Production Possibilities Curve 24
- 3-2 Circular Flow of Output and Income 43
- 4-5 Supply and Demand Model 59
- 9-2 Short-Run Production Relationships 144


<b>9-5</b>	Short-Run Cost Curves	148
<b>9-8</b>	Long-Run Average Cost Curve	152
<b>10-3</b>	Short-Run Pure Competition Model	169
<b>10-6</b>	Competitive Firm's Short-Run Supply Curve	172
<b>10-12</b>	Long-Run Equilibrium in Pure Competition	180
<b>11-3</b>	Pure Monopoly Model	195
<b>12-1</b>	Monopolistic Competition Model	210
<b>15-3</b>	Competitive Labor Demand and Labor Supply	259
<b>24-2</b>	Specialization and the Gains from International Trade	427
<b>25-3</b>	Market for Foreign Exchange	450





# CONTENTS

---

 Note: All chapter sections with substantial global content are indicated in light blue ink.

Preface *xvii*  
Acknowledgments *xxv*

## PART I

### AN INTRODUCTION TO ECONOMICS AND THE ECONOMY

#### 1 THE NATURE AND METHOD OF ECONOMICS 1

##### The Age of the Economist

Economics for citizenship. Personal applications.

##### Methodology

Descriptive economics. Economic theory. Policy economics: positive and normative.

##### Pitfalls to Objective Thinking

Bias. Loaded terminology. Definitions. Fallacy of composition. Cause and effect: post hoc fallacy.

##### The Economic Perspective

**LAST WORD** Fast-Food Lines: An Economic Perspective

Appendix to Chapter 1: Graphs and Their Meaning

#### 2 THE ECONOMIZING PROBLEM 19

##### The Foundation of Economics

Unlimited wants. Scarce resources.

##### Economics and Efficiency

Full employment and full production. Production possibilities table. Production possibilities curve. Optimal product-mix. Law of increasing opportunity costs.

##### Unemployment, Growth, and the Future

Unemployment and underemployment. A growing economy. Real-world applications.

##### The "Isms"

Pure capitalism. The command economy. Mixed systems. The traditional economy.

**LAST WORD** Operation Desert Storm and Iraq's Production Possibilities

#### 3 PURE CAPITALISM AND THE CIRCULAR FLOW 35

##### Capitalist Ideology

Private property. Freedom of enterprise and choice. Role of self-interest. Competition. Markets and prices. Limited government.

##### Other Characteristics

Extensive use of capital goods. Specialization and efficiency. Division of labor. Geographic specialization. Specialization and comparative advantage. Use of money.

##### The Circular Flow Model

Resource and product markets. Limitations.

**LAST WORD** Back to Barter

#### 4 UNDERSTANDING INDIVIDUAL MARKETS: DEMAND AND SUPPLY 47

##### Markets Defined

##### Demand

Law of demand. The demand curve. Individual and market demand. Determinants of demand. Changes in demand. Changes in quantity demanded.

##### Supply

Law of supply. The supply curve. Determinants of supply. Changes in supply. Changes in quantity supplied.

##### Supply and Demand: Market Equilibrium

Surpluses. Shortages. Equilibrium. Rationing function of prices. Changes in supply and demand. The resource market. "Other things equal" revisited.

##### Application: The Foreign Exchange Market

The dollar-yen market. Changing rates: depreciation and appreciation. Economic consequences.

**LAST WORD** The High Price of Marijuana

#### 5 THE PRIVATE SECTORS AND THE MARKET SYSTEM 67

##### Households as Income Receivers

The functional distribution of income. Personal distribution of income.

**Households as Spenders**

Personal taxes. Personal saving. Personal consumption expenditures.

**The Business Population**

**Legal Forms of Business Enterprises**

Sole proprietorship. Partnership. Corporation. Incorporate or not?

**Industrial Distribution and Bigness**

Types of industries. Big business.

**The Foreign Sector**

Volume, pattern, and linkages. Economic implications.

**The Competitive Market System**

**The Five Fundamental Questions**

**The Market System at Work**

Determining what is to be produced. Organizing production. Distributing total output. Accommodating change. Competition and control: the "invisible hand." The case for the market system.

**LAST WORD** The Financing of Corporate Activity

**6 THE PUBLIC SECTOR 88**

**Economic Functions of Government**

**Legal and Social Framework**

**Maintaining Competition**

**Redistribution of Income**

**Reallocation of Resources**

Spillovers or externalities. Public goods and services. Allocating resources to public goods. Stabilization.

**The Circular Flow Revisited**

**Government Finance**

Government growth: purchases and transfers. Some causes.

**Federal Finance**

Federal expenditures. Federal receipts.

**State and Local Finance**

State expenditures and receipts. Local expenditures and receipts. Fiscal federalism.

**LAST WORD** Lotteries: Facts and Controversies

**PART 2**

**MICROECONOMICS OF PRODUCT AND RESOURCE MARKETS**

**7 DEMAND AND SUPPLY: ELASTICITIES AND APPLICATIONS 105**

**Price Elasticity of Demand**

The price elasticity formula. Refinement: midpoints formula. Graphical analysis. The total-revenue test. Determinants of price elasticity of demand. Some practical applications.

**Price Elasticity of Supply**

**Cross and Income Elasticity of Demand**

Cross elasticity of demand. Income elasticity of demand.

**Applications: Legal Prices**

Price ceilings and shortages. Price floors and surpluses. Recapitulation.

**LAST WORD** The Troublesome Market for Health Care

**8 CONSUMER BEHAVIOR AND UTILITY MAXIMIZATION 124**

**Two Explanations of the Law of Demand**

Income and substitution effects. Law of diminishing marginal utility.

**Theory of Consumer Behavior**

Consumer choice and budget restraint. Utility-maximizing rule. Algebraic restatement.

**Marginal Utility and the Demand Curve**

**The Time Dimension**

The value of time. Some implications.

**LAST WORD** The Water-Diamond Paradox

Appendix to Chapter 8: Indifference Curve Analysis

**9 THE COSTS OF PRODUCTION 140**

**Economic Costs**

Explicit and implicit costs. Normal profits as a cost. Economic, or pure, profits. Short run and long run.

**Production Costs in the Short Run**

Law of diminishing returns. Fixed, variable, and total costs. Per unit, or average, costs. Marginal cost. Shifting the cost curves.

**Production Costs in the Long Run**

Firm size and costs. The long-run cost curve. Economies and diseconomies of scale. MES and industry structure.

**LAST WORD** Economies of Scale and Industrial Concentration

**10 PRICE AND OUTPUT DETERMINATION: PURE COMPETITION 160**

**Prelude: Four Market Models**

**Pure Competition: Concept and Occurrence**

**Demand to a Competitive Seller**

Perfectly elastic demand. Average, total, and marginal revenue. Graphical portrayal.

**Profit Maximization in the Short Run: Two Approaches**

Total-revenue-total-cost approach. Marginal-revenue-marginal-cost approach. Marginal cost and the short-run supply curve. Recapitulation. Firm and industry: equilibrium price.

**Profit Maximization in the Long Run**

Assumptions and goal. Zero-profit model. Entry of firms eliminates profits. Exodus of firms

eliminates losses. Long-run supply for a constant-cost industry. Long-run supply for an increasing-cost industry. Long-run supply for a decreasing-cost industry.

### **Pure Competition and Efficiency**

Qualifications.

**LAST WORD** The Theory of Contestable Markets

## **11 PRICE AND OUTPUT DETERMINATION: PURE MONOPOLY 187**

### **Pure Monopoly: An Introduction**

Characteristics. Examples. Importance.

### **Barriers to Entry**

Economies of scale. Public utilities: natural monopolies. Legal barriers: patents and licenses. Ownership of essential resources. Two implications.

### **Monopoly Demand**

Price exceeds marginal revenue. Price maker. Price elasticity.

### **Output and Price Determination**

Cost data.  $MR = MC$  rule. No monopoly supply curve. Misconceptions concerning monopoly pricing.

### **Economic Effects of Monopoly**

Price, output, and resource allocation. Income distribution. Cost complications. Technological progress: dynamic efficiency.

### **Price Discrimination**

Conditions. Illustrations. Consequences.

### **Regulated Monopoly.**

Socially optimal price:  $P = MC$ . "Fair-return" price:  $P = AC$ . Dilemma of regulation.

**LAST WORD** Monopolies in the National Parks

## **12 PRICE AND OUTPUT DETERMINATION: MONOPOLISTIC COMPETITION 207**

### **Monopolistic Competition: Concept and Occurrence**

Relatively large numbers. Product differentiation. Nonprice competition. Easy entry. Illustrations.

### **Price and Output Determination**

The firm's demand curve. The short run: profits or losses. The long run: break even.

### **Wastes of Monopolistic Competition**

Excess capacity. Redeeming features?

### **Nonprice Competition**

Product differentiation and product development.

### **The Economics of Advertising**

Controversy and scope. Two views. Empirical evidence.

### **Monopolistic competition and economic analysis.**

**LAST WORD** The Market for Principles of Economics Textbooks

## **13 PRICE AND OUTPUT DETERMINATION: OLIGOPOLY 220**

### **Oligopoly: Concept and Occurrence**

Oligopoly defined. Underlying causes.

### **Oligopoly Behavior: A Game Theory Overview**

Mutual interdependence. Collusive tendencies. Incentive to cheat.

### **Four Oligopoly Models**

Kinked demand: noncollusive oligopoly. Collusion and cartels. Price leadership. Cost-plus pricing.

### **Role of Nonprice Competition**

### **Oligopoly and Economic Efficiency**

Allocative and productive efficiency. Dynamic efficiency. Technological progress: the evidence.

Automobiles: A Case Study

**LAST WORD** The Beer Industry: Oligopoly Brewing?

## **14 PRODUCTION AND THE DEMAND FOR RESOURCES 240**

### **Significance of Resource Pricing**

### **Complexities of Resource Pricing**

### **Marginal Productivity Theory of Resource Demand**

Resource demand as a derived demand. Marginal revenue product (MRP). Rule for employing resources:  $MRP = MRC$ . MRP is a demand schedule. Resource demand under imperfect competition. Market demand for a resource.

### **Determinants of Resource Demand**

Changes in product demand. Productivity changes. Prices of other resources.

### **Elasticity of Resource Demand**

### **Optimal Combination of Resources**

The least-cost rule. The profit-maximizing rule. Numerical illustration.

### **Marginal Productivity Theory of Income Distribution**

**LAST WORD** Input Substitution: The Case of Cabooses

## **15 THE PRICING AND EMPLOYMENT OF RESOURCES: WAGE DETERMINATION 255**

### **Meaning of Wages**

### **General Level of Wages**

Role of productivity. Real wages and productivity. Secular growth.

### **Wages in Particular Labor Markets**

Competitive model. Monopsony model. Some union models. Wage increases and unemployment. Bilateral monopoly model. The minimum-wage controversy.

### **Wage Differentials**

Noncompeting groups. Equalizing differences. Market imperfections.