

Applied Microeconomics



Edwin Mansfield

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APPPLIED

Microeconomics

EDWIN MANSFIELD

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About the Author

Edwin Mansfield is Professor of Economics and Director of the Center for Economics and Technology at the University of Pennsylvania. Prior to joining the Penn faculty, he taught at Carnegie-Mellon, Yale, Harvard, and California Institute of Technology. He has been elected a fellow of the American Academy of Arts and Sciences, of the Econometric Society, of the Center for Advanced Study in the Behavioral Sciences, and he has held Fulbright and Ford Foundation fellowships. He was included on the *Journal of Economic Perspectives*' list of 20 most cited economists in the United States.



Long involved in applied microeconomics, Professor Mansfield has been a consultant to many industrial firms and government agencies, including Exxon, Westinghouse, GTE, Stauffer Chemical, the Rand Corporation, the Small Business Administration, and the Federal Trade Commission, and has given television courses for executives at AT&T, Hewlett-Packard, IBM, and other firms. He has been a member of the board of directors of the American Productivity and Quality Center, the Advisory Committee of the U.S. Bureau of the Census, and the AAAS's Committee on Science, Engineering and Public Policy. He has received the Certificate of Appreciation of the U.S. Secretary of Commerce, and was appointed to the National Technology Medal Committee.

He is the author of almost 200 articles and over 25 books. His textbooks on economics, microeconomics, managerial economics, and statistics have been adopted at over 1,000 colleges and universities, and have been translated for use abroad. He has been on the editorial board of a number of journals, including the *Journal of the American Statistical Association*. A graduate of Dartmouth College, he received his M.A. and Ph.D. degrees from Duke

University, as well as the Certificate and Diploma of the Royal Statistical Society. He has been chairman of the Visiting Committee at the Rensselaer Polytechnic Institute, U.S. chairman of the U.S.-U.S.S.R. Working Party on the Economics of Science and Technology, and the first U.S. economist to visit and lecture in the People's Republic of China under the 1979 Sino-American agreements. He has received the Publication Award of the Patent Law Association and the Honor Award of the National Technological University for research, teaching, and public service.

Preface

This is a book on applied microeconomics. It has been designed primarily for the many classes given each year for students who want to learn how microeconomic theory can help them become better managers, public officials, lawyers, or members of other such professional groups. While most of this book focuses on microeconomic theory, the overall treatment and balance of presentation have been shaped with the needs and interests of these students in mind. Indeed, this book has arisen in its present form from classes I have given for such students at the Wharton School (and other parts) of the University of Pennsylvania for many years.

Among economists, there is general agreement that a knowledge of microeconomics is of great value in helping people make better decisions in the office, the factory, the home, and the voting booth. Unfortunately, students (at least while studying the subject) often think otherwise. In my view, one basic reason why students frequently are turned off by courses in microeconomic theory is that too little attempt is made to show them *repeatedly* and *in detail* exactly how microeconomic theory can be applied to help solve *real* problems faced by *actual* decision-makers in industry and government. While a variety of snippets illustrating this or that concept are included in most textbooks, students often regard them as mere flavoring added to make the theory go down a little easier. Nowhere in any leading textbook is there a series of chapter-length demonstrations, using real and contemporary data and experience, of how microeconomic theory really can and has been applied.

My purpose in this new book is to fill this major gap. Five chapters of this book are devoted entirely to individual industries—petroleum (Chapter 6), milk and dairy products (Chapter 9), movie theaters (Chapter 14), aircraft (Chapter 18), and California water (Chapter 20). In each of these chapters, after a brief discussion of the industry's structure and problems, the student is asked to use the theory he or she has taken up in previous chapters to solve ten real multi-part problems related to major decisions and issues in this industry. The situation and actual data are given; the decision-makers are described in detail and often quoted and pictured. Unlike the snippets currently available, each of these chapters forces the student to become immersed in much of the full complexity of actual industrial and government decisions and to bring a variety of microeconomic tools and concepts to bear on these decisions. For half of the problems, answers are provided to guide the student and to provide useful feedback; for the other half, no answers are given. Further material regarding each of these chapters is printed on the inside front cover of this book.

Based on my experience with these five chapters in the classroom, they add important new dimensions to microeconomics courses. There has been a dearth of materials that demonstrate convincingly the power of microeconomics at a level and in a form that is appropriate for undergraduates and MBA students. And the little available material has not been integrated with the theoretical chapters of any textbook so that it can be used easily and effectively. Students, as economists above all understand, are interested in what microeconomic theory can do for them, on the job and elsewhere. In my experience, they react very positively to these full-length demonstrations of exactly how the theory has been used to help illuminate a wide range of problems and issues facing well-known decision-makers in each of these industries. They are motivated to learn the theory better and tend to retain it longer.

Further, each of these chapters draws on all preceding parts of the course, thus helping to prevent the balkanization of knowledge that affects some classes. Too frequently, students forget some of the material presented early in the course by the time they get close to the final examination. Each of these chapters forces the student to use a wide range of analytical tools presented in all previous chapters, and thus encourages a periodic review of previous materials and an integration of various parts of the course. Also, many cases are extended beyond the particular chapters where they appear. Sections of later chapters (as well as end-of-chapter questions) revisit the industries studied in previous cases and show the student how the new techniques taken up in later chapters can be applied to these industries.

How much class time is devoted to each of these chapters will vary, of course, with the nature and length of the course, as well as with the characteristics of the students. To permit instructors to tailor the problems they assign to the needs of their own classes, a wide variety of problems are included, some easy, some challenging. Because each is self-contained, there is no need to take up all of them. Since the answers to the even-numbered problems are not given at the end of the book, these problems may be particularly useful for class discussion or homework assignment. (Answers to the even-numbered problems are available in the Instructor's Manual.) Some instructors may prefer to assign many of the problems for homework, but not take them up in class. This can readily be done.

Excluding these five chapters, this book contains a full treatment of microeconomic theory. Most chapters are almost identical to the corresponding chapters in my *Microeconomics: Theory and Applications*, eighth edition. The principal changes in this regard are that the material on uncertainty and investment decisions has been summarized in a single chapter here, and that much of the material on welfare economics, externalities, and public goods has been combined in a single chapter. Also, some material has been altered to integrate these five chapters with the rest of the book. Overall, the length of this book is no greater than that of the typical microeconomics text, despite the addition of the five chapters described above.

Of course, the inclusion of these chapters does not mean that brief examples dealing with other industries and issues are not offered as well. On the contrary, there are over 40 boxed examples, dealing with topics ranging from fur sales to health insurance. Also, there are many applications included in the theoretical chapters. Like *Microeconomics: Theory and Applications*, a hallmark of this book is the continuous interplay between theory and applications. A list of the over 100 real world applications (excluding the five chapter-length presentations) contained here is printed on the inside back cover of this book.

A workbook accompanies this text. This supplement (*Study Guide and Casebook for Applied Microeconomics*) contains hundreds of problem sets, problems, and review questions (as well as their answers), which should be helpful to students. The problems and questions have been tested for effectiveness in the classroom. An important feature of this supplement is the inclusion of the following five full-length classroom-tested cases: (1) "The Standard Oil Company: British Petroleum Loses Patience" (by J. David Hunger), (2) The Dairy Industry (by Richard Fallert, Don Blayney, and James Miller), (3) Cineplex Odeon Corporation (by Joseph Wolfe), (4) Airbus Industries: A Wave of the Future (by Shaker Zahra, Daniel Hurley, Jr., and John Pearce II), and (5) California Water Pricing (by Dorothy Robyn). Each of these cases supplements one of the five chapters of the text dealing with problems and issues in a particular industry. Thus, they enable the student to go deeper into these problems and issues, and enrich classroom discussion.

An *Instructor's Manual* is available for the text. In addition to teaching suggestions for each chapter, it includes a test bank of multiple-choice questions and problem sets which reflect the decision-making emphasis of the text. Kathryn Nantz, the author of the Instructor's Manual, has created a varied menu of teaching materials for this new book.

Test questions are also available to instructors on floppy disks for use with a personal computer. Information on obtaining these disks can be obtained from the publisher.

I am indebted to the following instructors and reviewers who have contributed in important ways to this book: Donald C. Cell, Cornell College; Clifford Dobitz, North Dakota State; Tran Dung, Wright State University; Brad Kamp, University of South Florida; Thomas Kniesner, Indiana University; William Lee, St. Mary's College; Mark Machina, University of California San Diego; Lawrence Martin, Michigan State University; Kathryn Nantz, Fairfield University; James Stephenson, Iowa State University; and Charles Strein, University of Northern Iowa. W. Drake McFeely and Cathy Wick of Norton did a fine job. Special thanks go to my wife, who helped in countless ways.

E.M.
Philadelphia, 1994

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