

MICROECONOMICS

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FIFTH EDITION

Robert S. Pindyck
Daniel L. Rubinfeld

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Robert S. Pindyck

Massachusetts Institute of Technology

Daniel L. Rubinfeld

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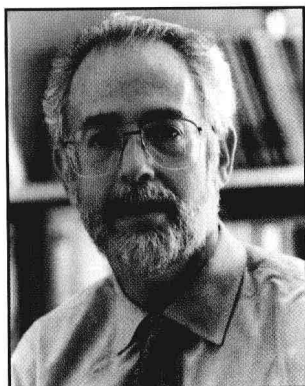
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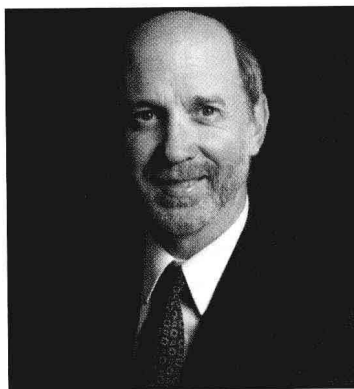
*Maya, Talia, and Shira
Sarah and Rachel*

ABOUT THE AUTHORS



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Professor Daniel L. Rubinfeld

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PREFACE

For students who care about how the world works, microeconomics is one of the most relevant and interesting subjects they can study. A good grasp of microeconomics is vital for managerial decision making, for designing and understanding public policy, and more generally for appreciating how a modern economy functions.

We wrote this book, *Microeconomics*, because we believe that students need to be exposed to the new topics that have come to play a central role in microeconomics over the years—topics such as game theory and competitive strategy, the roles of uncertainty and information, and the analysis of pricing by firms with market power. We also felt that students need to be shown how microeconomics can help us to understand what goes on in the world and how it can be used as a practical tool for decision making. Microeconomics is an exciting and dynamic subject, but students need to be given an appreciation of its relevance and usefulness. They want and need a good understanding of how microeconomics can actually be used outside the classroom.

To respond to these needs, the fifth edition of *Microeconomics* provides a treatment of microeconomic theory that stresses its relevance and application to both managerial and public-policy decision making. This applied emphasis is accomplished by including 107 extended examples that cover such topics as the analysis of demand, cost, and market efficiency; the design of pricing strategies; investment and production decisions; and public policy analysis. Because of the importance that we attach to these examples, they are included in the flow of the text. (A complete list of the examples is included in the table of contents on pages ix–xxii.)

The coverage in the fifth edition of *Microeconomics* incorporates the dramatic changes that have occurred in the field in recent years. There has been growing interest in game theory and the strategic interactions of firms (Chapters 12 and 13), in the role and implications of uncertainty and asymmetric information (Chapters 5 and 17), in the pricing strategies of firms with market power (Chapters 10 and 11), and in the design of policies to deal efficiently with externalities such as environmental pollution (Chapter 18). These topics, which have only recently received attention in most books, are covered extensively here.

That the coverage in *Microeconomics* is comprehensive and up-to-date does not mean that it is “advanced” or difficult. We have worked hard to make the exposition clear and accessible as well as lively and engaging. We believe that the study of microeconomics should be enjoyable and stimulating. We hope that our book reflects this belief. Except for appendices and footnotes, *Microeconomics*

uses no calculus. As a result, it should be suitable for students with a broad range of backgrounds. (Those sections that are more demanding are marked with an asterisk and can be easily omitted.)

Changes in the Fifth Edition

Each new edition of this book has built on the success of prior editions by adding a number of new topics, by adding and updating examples, and by improving the exposition of existing materials. The fifth edition continues in that tradition. We have included a new section on auctions in Chapters 13 (Game Theory and Competitive Strategy), and we have expanded our coverage of supply-demand analysis in Chapter 2, as well as our coverage of cost in Chapters 7 and 8. In addition, we have added several new examples, and we have replaced a number of older examples with new ones.

In keeping with the preferences of many of our faithful users, we have not changed the chapter organization of the book. However, we have significantly revised portions of the first eight chapters, explaining some basic concepts in a more detailed and systematic way. Our primary goal in revising the book has been, as always, to make the text as clear, accessible, and engaging as possible.

The fifth edition of *Microeconomics*, like the fourth, is printed in four colors. As before, we have tried to use color to make the figures as clear and pedagogically effective as possible. In addition, we have added several new diagrams, and we have modified a number of existing diagrams to improve their accuracy and clarity.

This edition uses a larger text layout than earlier editions. This gave us the opportunity to add some new pedagogical devices. Key terms now appear in boldface and are defined in the margins of the text. Often, important ideas in microeconomics build on concepts that have been developed earlier in the text. In recognition of this fact, we have added a number of Concept Links in the margins, which explicitly direct the student to prior relevant materials.

Alternative Course Designs

The fifth edition of *Microeconomics* offers instructors substantial flexibility in course design. For a one-quarter or one-semester course stressing the basic core material, we would suggest using the following chapters and sections of chapters: 1, 2, 3, 4.1–4.4, 6, 7.1–7.4, 8, 9.1–9.3, 10, 11.1–11.3, 12, 14, 15.1–15.4, 18.1–18.2, and 18.5. A somewhat more ambitious course might also include parts of Chapters 5 and 16 and additional sections in Chapters 4, 7, and 9. To emphasize uncertainty and market failure, an instructor should also include substantial parts of Chapters 5 and 17.

Depending on one's interests and the goals of the course, other sections could be added or used to replace the materials listed above. A course emphasizing modern pricing theory and business strategy would include all of Chapters 11, 12, and 13 and the remaining sections of Chapter 15. A course in managerial economics might also include the appendixes to Chapters 4, 7, and 11 as well as the appendix on regression analysis at the end of the book. A course stressing welfare economics and public policy should include Chapter 16 and additional sections of Chapter 18.

Finally, we want to stress that those sections or subsections that are more demanding and/or peripheral to the core material have been marked with an asterisk. These sections can easily be omitted without detracting from the flow of the book.

Supplementary Materials

Ancillaries of an exceptionally high quality are available to instructors and students using the fifth edition of *Microeconomics*. The **Instructor's Manual**, prepared by Nora Underwood of the University of California, Davis, provides detailed solutions to all end-of-chapter Review Questions and Exercises. Each chapter also contains Teaching Tips to summarize key points and extra Review Questions with answers.

The **Test Bank**, prepared by John Crooker of Texas Tech University, contains over 2,000 multiple-choice and short-answer questions with solutions. It is designed for use with the Prentice Hall **Test Manager**, a computerized package that allows instructors to custom-design, save, and generate classroom tests.

A **PowerPoint Lecture Presentation**, created by Jeffrey Caldwell and Steven Smith, both of Rose State College, is available for the fifth edition and can be downloaded from the text Web site (www.prenhall.com/pindyck). Instructors can edit the detailed outlines and summaries to fit their own lecture presentations. A set of **Color Acetates** of the figures and selected tables from the text is available for instructors using the fifth edition of *Microeconomics*.

The **Study Guide**, prepared by Valerie Suslow of the University of Michigan and Jonathan Hamilton of the University of Florida, provides a wide variety of review materials and exercises for students. Each chapter contains a list of important concepts, chapter highlights, a concept review, problem sets, and a self-test quiz. Worked-out answers and solutions are provided for all exercises, problem sets, and self-test questions.

Prentice Hall's Learning on the Internet Partnership (myPHLIP)/Companion Web site (www.prenhall.com/pindyck) is a Web site with Internet exercises, activities, and resources related specifically to this text. New Internet resources are added every two weeks to provide both the student and the instructor with updated services. The site includes an **On-Line Study Guide**, prepared by Peter Zaleski of Villanova University, containing multiple-choice and essay questions. The On-Line Study Guide has a built-in grading feature that provides students with immediate feedback in the form of coaching comments.

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

Prentice Hall provides faculty with Internet tools to help create on-line courses. It provides content and enhanced features to help instructors create full-length on-line courses or simply produce on-line supplementary materials to use in existing courses. Content is available on both WebCT and Blackboard platforms.

Acknowledgments

Because the fifth edition of *Microeconomics* has been the outgrowth of years of experience in the classroom, we owe a debt of gratitude to our students and to the colleagues with whom we often discuss microeconomics and its presentation. We have also had the help of capable research assistants. For the first four editions of the book, these included Walter Athier, Phillip Gibbs, Jamie Jue, Masaya Okoshi, Kathy O'Regan, Karen Randig, Subi Rangan, Deborah Senior, Ashesh Shah, and Wilson Tai. Kathy Hill helped with the art, while Assunta

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R.S.P.

D.L.R.

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