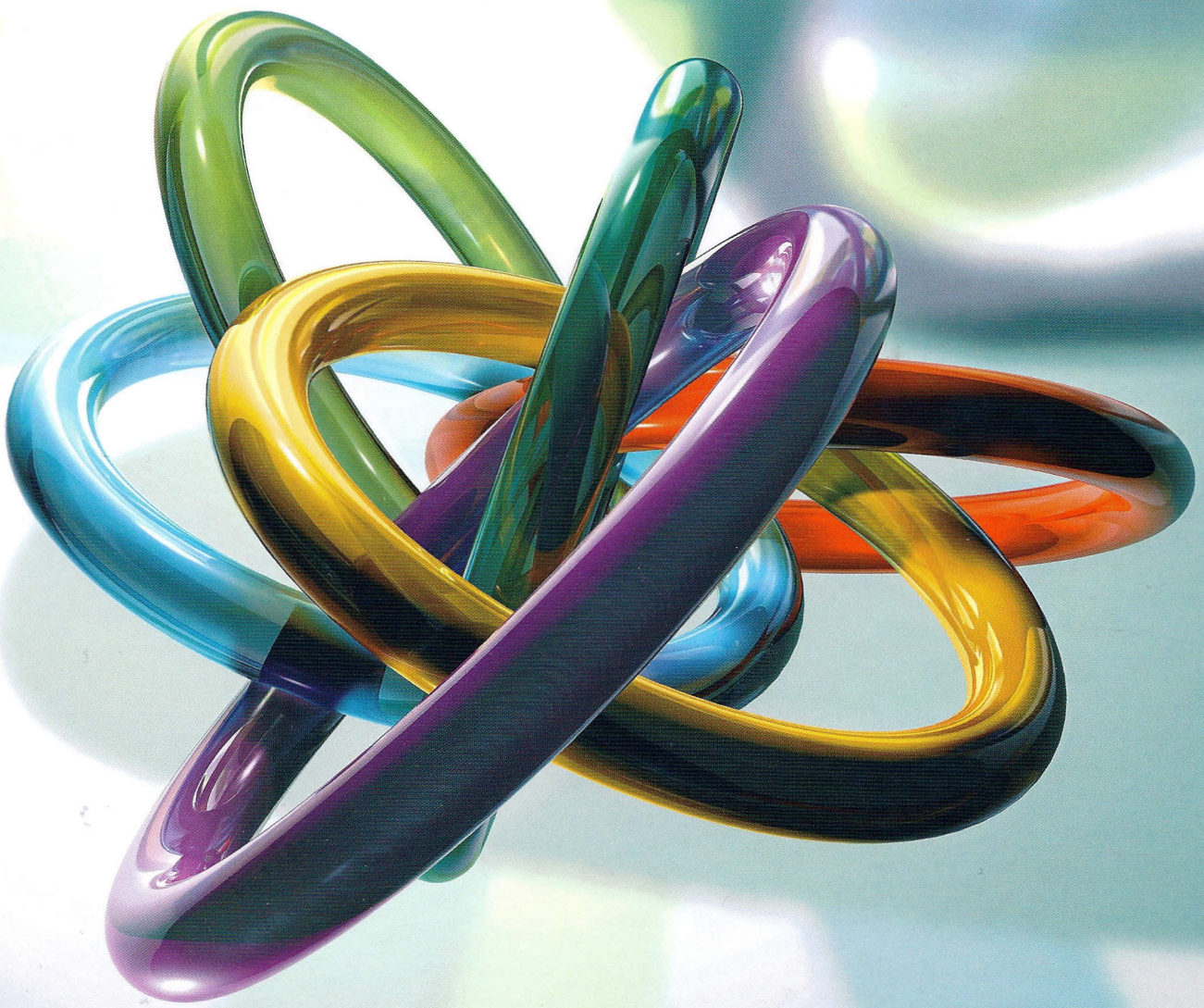
Microeconomics

SEVENTH EDITION



ROBERT S. PINDYCK DANIEL L. RUBINFELD

Real-world examples are key to the applied approach of this book. The seventh edition of Microeconomics incorporates more than 100 detailed examples into the flow of the text. The following is a list of these examples:

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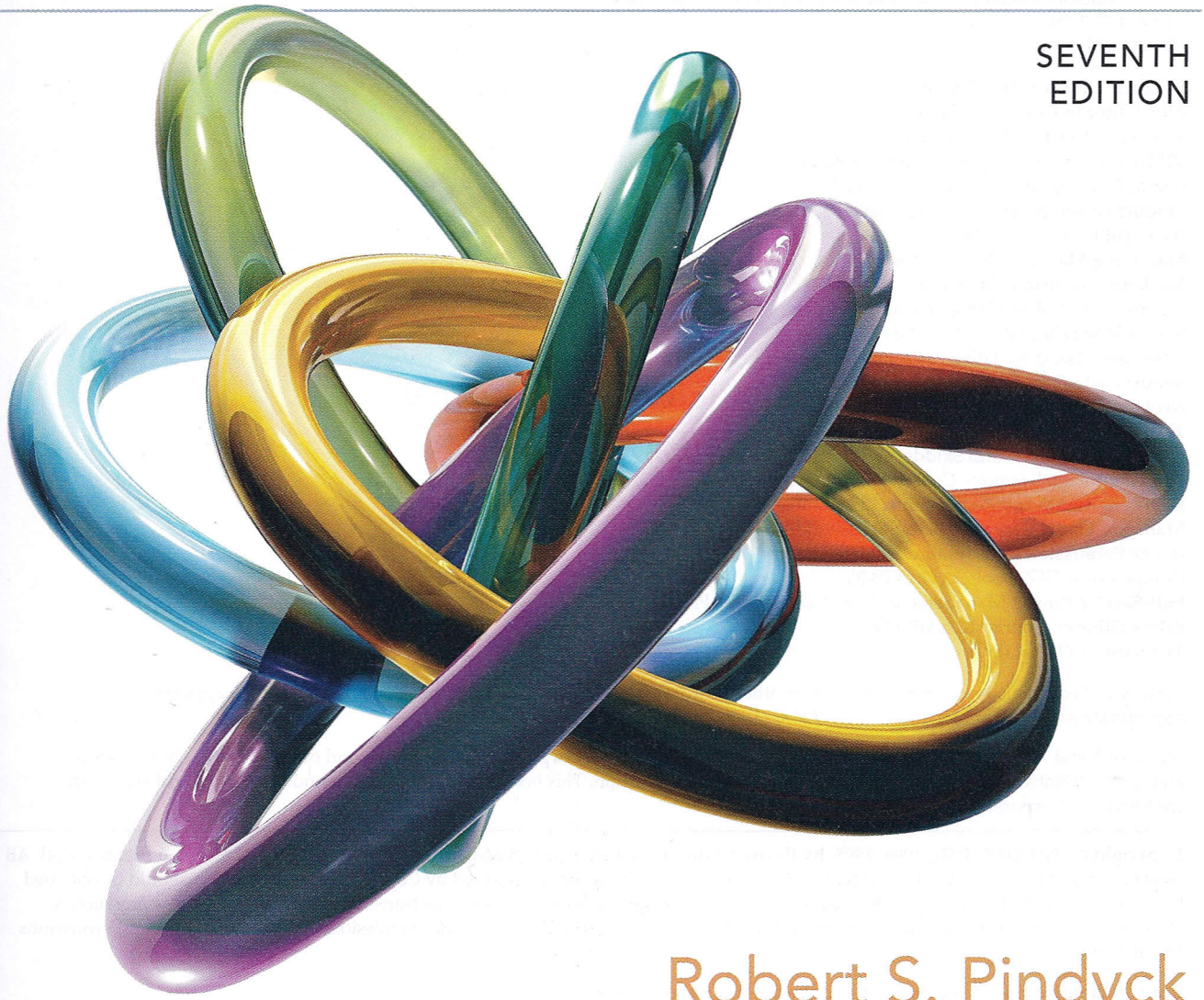

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To our daughters,

Maya, Talia, and Shira
Sarah and Rachel

ABOUT THE AUTHORS

FIGURE 0.1 Authors of Microeconomics

The authors, back again for a new edition, reflect on their years of successful textbook collaboration. Pindyck is on the right and Rubinfeld on the left.

Revising a textbook every three or four years takes considerable work, so Pindyck asked, "Why bother? The last edition was clearly written and students loved it." "Don't be silly," replied Rubinfield. "Remember what our publisher said—the old edition was getting stale, and we need some new and jazzy examples." "I guess that makes sense," replied Pindyck, "but do you think it has anything to do with the used book market?" Rubinfield paused. "Could be, but remember that 7 is our lucky number."

Robert S. Pindyck is the Bank of Tokyo-Mitsubishi Ltd. Professor of Economics and Finance in the Sloan School of Management at M.I.T. Daniel L. Rubinfeld is the Robert L. Bridges Professor of Law and Professor of Economics at the University of California, Berkely, and Visiting Professor of Law at NYU. Both received their Ph.D's from M.I.T., Pindyck in 1971 and Rubinfeld in 1972. Professor Pindyck's research and writing have covered a variety of topics in microeconomics, including the effects of uncertainty on firm behavior and market structure, the determinants of market power, the behavior of natural resource, commodity, and financial markets, and criteria for investment decisions. Professor Rubinfeld, who served as chief economist at the Department of Justice in 1997 and 1998, is the author of a variety of articles relating to antitrust, competition policy, law and economics, law and statistics, and public economics.

Pindyck and Rubinfeld are also co-authors of *Econometric Models and Economic Forecasts*, another best-selling textbook that may yet be turned into a feature film. Always looking for ways to earn some extra spending money, the two authors recently enrolled as human subjects in a double-blind test of a new hair restoration medication. Rubinfeld strongly suspects that he is being given the placebo.

This is probably more than you want to know about these authors, but for further information, see their websites: **http://web.mit.edu/rpindyck/www** and **http://www.law.berkeley.edu/faculty/rubinfeldd**.

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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 seventh 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 118 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 is included on the endpapers inside the front cover.)

The coverage in this 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 receive only limited 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 SEVENTH 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 seventh edition continues that tradition. We have expanded and updated Chapter 18 (Externalities and Public Goods), so that it now includes a more thorough and up-to-date treatment of environmental economics, a topic that has been receiving increasing coverage in many intermediate microeconomics courses. In particular, we have rewritten and improved the clarity of the sections on externalities, included a new section on stock externalities (of the kind that arise with greenhouse gases and global warming), and added an example on pollution control in China. We have also introduced new material on alternative forms of organizations in Chapter 8, substantially revised and updated our coverage of behavioral economics in Chapter 5, and improved the exposition of some of the core material on production and cost in Chapters 6, 7, and 8, including the mathematical appendix to Chapter 7. In Chapter 14, we added new material to clarify the distinction between monopsony power and bargaining power. In addition, we have added several new examples, replaced a number of older examples with new ones, and updated most of the other examples.

These improvements aside, we have maintained our prior chapter organization. This should make it easy for those who have been loyal users in the past to make the transition to the new edition. As always, we have attempted to make the text as clear, accessible, and engaging as possible.

The layout of this edition is similar to that of the prior edition. This has allowed us to continue to define key terms in the margins (as well as in the Glossary at the end of the book), and also to use the margins to include Concept Links that relate newly developed ideas to concepts introduced previously in the text.

ALTERNATIVE COURSE DESIGNS

This new edition of *Microeconomics* offers instructors considerable 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 through 6, 7.1-7.4, 8 through 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 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 appendices 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 this book. The *Instructor's Manual*, prepared by Duncan M. Holthausen of North Carolina State University provides detailed solutions to all end-of-chapter Questions for Review and Exercises. The seventh edition contains many entirely new review questions and exercises, and a number of exercises have been revised and updated. The new instructor's manual has been revised accordingly. Each chapter also contains Teaching Tips to summarize key points.

The *Test Bank*, prepared by Douglas J. Miller of the University of Missouri, contains approximately 2,000 multiple-choice and short-answer questions with solutions. All of this material has been thoroughly reviewed, accuracy checked, and revised for this edition. The print version of the Test Bank is designed for use with the new *TestGen* test-generating software. This computerized package allows instructors to custom-design, save, and generate classroom tests. The test program 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. This new software allows for greater flexibility and ease of use. It provides many options for organizing and displaying tests, along with a search and sort feature.

The *PowerPoint Lecture Presentation* has been completely revised for this edition by Fernando and Yvonn Quijano of Dickinson State University. Instructors can edit the detailed outlines to create their own full-color, professional-looking presentations and customized handouts for students. The PowerPoint Presentation is downloadable from the Instructor Resources link at **www.prenhall.com/pindyck**.

A set of four-color *Acetates* of selected figures and tables from the text is available for instructors using the seventh edition.

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.

Online Resources The *Companion Website* (**http://www.prenhall.com/pindyck**) is a content-rich website with exercises, activities, and resources related specifically to the seventh edition of *Microeconomics*. The *Online Study Guide* offers students another opportunity to sharpen their problem-solving skills and to assess their understanding of text material. It contains a set of both multiple-choice and essay quizzes. Each question submitted by the student is graded and immediate feedback is provided for correct and incorrect answers. The online study guide also allows students to e-mail results to up to four e-mail addresses. The website also provides current events articles and exercises related to topics in the book. These exercises help show students the relevance of economics in today's world. They may also direct students to appropriate updated economics-related websites to gather data and analyze specific economic problems.

For instructors, the Companion Website provides a *Syllabus Manager*. This feature allows instructors to enhance their lectures with all the resources available with this text. Instructors can post their syllabus to the site and download supplements and lecture aids. Instructors should log in under Instructor Resources in order to access this material.

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