

PRINCIPLES OF  
*microeconomics*



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Poole*

**PRINCIPLES OF**

# **Microeconomics**

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*To our students, who have taught us so much  
as they used this book in draft form,  
and to our families, whose understanding, patience, and encouragement  
during evening and weekend hours spent on the book,  
have led to the finished product*

## About the Authors



**J. Vernon Henderson**, Professor of Economics at Brown University, received his PhD from the University of Chicago. He has worked extensively as an economist abroad, in Spain, China, India, Nepal, Brazil, and Canada. Recipient of a Guggenheim Memorial Fellowship, an Earhart Foundation Fellowship, and several National Science Foundation grants, Professor Henderson is a consultant to the World Bank and a research associate for the National Bureau of Economic Research. A frequent contributor to journals such as *American Economic Review*, *Journal of Political Economy*, *Journal of Public Economics*, and *Journal of Urban Economics*, he is also the author of *Economic Theory and the Cities* (1985) and *Urban Development: Theory, Fact, and Illusion* (1988). Currently, he is working on issues of industrial location and urban development in developing countries and the impact of fiscal decentralization on resource allocation. Besides his work and his foreign travels, Professor Henderson enjoys playing competitive squash and bringing up his four children, ages six to seventeen.

**William Poole**, Herbert H. Goldberger Professor of Economics at Brown University, received his PhD from the University of Chicago. From 1982 to 1985, he served as a member of the Council of Economic Advisers to President Reagan. He currently acts as an Adjunct Scholar for both the American Enterprise Institute and the Cato Institute, and is a research associate of the National Bureau of Economic Research, a member of the Shadow Open Market Committee and an associate member for the Institute of Fiscal and Monetary Policy, Ministry of Finance, Japan. Professor Poole sits on advisory boards to the Federal Reserve Bank of New York and the Congressional Budget Office. He is a frequent contributor to the *Journal of Finance*, *American Economic Review*, and the *Journal of Money, Credit, and Banking*, of which he is also an associate editor. His current research is on issues in monetary policy, macroeconomics, and international finance. In addition to teaching, writing, and consulting, Professor Poole also finds time and enthusiasm for competitive sailing, and enjoys photography, travel, woodworking, hiking and camping.

# Preface

There is no shortage of introductory economics texts, but there is a shortage of modern, relevant, and well-written ones. We wrote this text so that students could have a pedagogically sound presentation of modern economics. There is an emphasis on data (what economists know) and policy (how government economic policies are created) that is rare in an introductory text. The data are here to give students a basic knowledge of the facts about our world economy and to provide real-life examples. The policy emphasis helps students understand the critical role of government in today's mixed economies. Moreover, evaluation of public policy is the skill that students need most, because that is how they will apply their knowledge of economics when they venture forth from college to join the labor force and participate in a democracy. The objective of this book is to blend economic modeling with a sense of what is important about economies and how and when economic models are applied to the real world. We have written this book with both students and instructors in mind.

## For the Student

Material is clearly presented in a lively, informal style. We provide many examples in the text—in the Focus boxes, in the problems, and in the text proper. We are especially mindful of the need for examples in the traditionally dry theory sections. We have avoided ending sections with vague references to how some theory can be applied to real life, made more complex, or extended to lots of other problems. We have tried to make everything in the text understandable, immediately relevant, and sufficiently illustrated, so that students can embark on their own applications and extensions in the problem sets.

The book has a twofold international focus throughout: (1) We emphasize that today the United States is an open economy. Links to the rest of the world are pervasive; they affect public policy not only with respect to trade but also in such areas as antitrust

policy, the environment, labor markets, and the drug problem. (2) We are well aware that today's students often travel abroad. We emphasize that they need to understand that economic models apply in other cultures but that local laws and institutions also affect market structures and outcomes. Examples of economic behavior in everyday life from around the world appear throughout the text. These examples include common-property issues for nomads in Central Asia, public-utility regulation in Nigeria, and many others. Economic applications from developing countries are especially abundant and important because they help students see the universal aspects of economic principles.

## For Instructors

We have tried to make teaching easier. We have worked hard to provide clear exposition. We make topics interesting both through hypothetical examples and through highly relevant real-world examples. We want students to be motivated by a desire to understand the world around them. We emphasize the science and facts of economics; we made a conscious decision to keep the book as ideologically balanced as we possibly could. This does not mean that the book is without opinions. Rather, students are taught how to think in economic terms and how to make their own evaluations and form their own opinions. We simply provide them with tools, facts, and an understanding of the complexity of most public-policy issues. Economics is an evolving discipline, even at the introductory level, and it is important that students learn to apply a healthy skepticism to the latest fad theory.

We have blended modern theory into traditional topics. There are chapters and sections and in some cases appendixes on information economics, corporate finance, public choice, game theory, and others. These may be assigned or ignored as one chooses, without loss of continuity. However, the concepts from these developments in economic theory are blended

into the presentation of traditional topics in an informal fashion. Professional economists, as readers of the journal literature, are very familiar with the key concepts from developments in economics over the last quarter-century. These developments give us new insight into such traditional topics as Marshallian price theory. We put aside economics journal literature that must be regarded at this time as speculative, and concentrate on the newer developments that have become an established part of mainstream economics. We weave this body of established newer work into the text while maintaining the traditional presentation of topics. A reader may even be unaware that a concept from game theory or from information economics has been introduced in presenting a traditional analysis. Again, the emphasis is on clarity, intuition, application to everyday life, and consistency in level and style of presentation.

## Organization

The text begins with an introductory section (Chapters 1–5). It covers the general topics—from scarcity and a market economy to the use of diagrams and other tools of economic analysis—that all students need to learn as they begin their study of economics. The true flavor of economic analysis, however—the behavior of rational, utility-maximizing and profit-maximizing economic agents—is found in the later chapters.

After the introductory chapters, the instructor may turn to either the consumer (Chapter 6) or to the firm (Chapters 7–9). The treatment of marginal analysis of the firm stands on its own, so that it can be covered before consumer theory. The sections on market structure (Chapters 10–14), factor markets and income distribution (Chapters 15–19), and public economics (Chapters 20–23) can be done in any order. Within those sections, chapters on poverty, the income of nonlabor factors, the environment, public choice, and so on may be used or omitted as desired. In short, each chapter is fairly self-contained, within the constraint that we are building on concepts.

Chapter 6 on consumer theory is designed to be a comprehensive treatment of the consumer. However, the later sections of the chapter can be omitted without loss of continuity. Chapter 7 is a self-contained chapter on the nature of the firm and on corporate finance, again for those who favor a comprehensive treatment or who are teaching students with a focus on business. We recommend that students read at least the sections

on the nature of firms and choice of the form of business organization; they are written with a clear emphasis on intuition and examples. Chapters 8 and 9 are traditional treatments of cost and production relationships. Chapter 10 is a traditional treatment of perfect competition.

Chapters 11 and 12 on monopoly and oligopoly cover all the traditional topics. But there are two special features to these chapters: (1) we emphasize facts and real-life examples, beyond the usual discussion of scale economies. For example, we discuss the rapid rates of entry and exit of firms, even in stable industries, and the evolution of markets for new products, from the monopoly-inventor in the early years to sales of standardized products in competitive markets in later years. Another example is the actual strategies some firms employ to deter entry of new competitors, to separate markets by means of discriminatory pricing, or to form and enforce cartels and rig prices. (2) We weave in modern theory around traditional topics, such as the application of discriminatory two-part pricing, the application of monopolistic competition in modern markets, and the application of game theory to analyze the behavior of rival firms. Again, the emphasis is on intuition.

Chapter 13 is a balanced treatment of regulation and antitrust legislation, emphasizing the evolution and application of laws over time and our changing perceptions of what should and should not be regulated. Chapter 14 is a comprehensive overview of the topics in information theory.

Chapters 15–19 thoroughly discuss factor markets, income determination and distribution, human capital, unionization, poverty, and discrimination. These chapters are distinguished by both their heavy reliance on data and the wide range of concepts and topics covered. Again, each chapter is as self-contained as possible. Complex issues, such as poverty, are put in a framework that enables students to make their own evaluations of good public policy. The discussion of unionization is complete and up to date—a review of the history of the movement, an analysis of its place in today's economy, and an emphasis on the positive role of modern unions.

Chapters 20–23 analyze the public sector. Chapter 20 examines externalities and public goods as a way of explaining the normative basis for government intervention. Chapter 21 is an unusually comprehensive treatment of environmental issues, emphasizing the role of the life sciences in developing solutions

and the global scope of many problems. Environmental issues are a major topic of the 1990s, and most high school students enter college with a heightened awareness. A thorough economic analysis of the subject, connected to real-world issues, is critical to an introductory economics text.

Chapter 22 presents a basic picture of public finance—government revenues and expenditures, as well as the principles of taxation and expenditure. Federalism is emphasized, as is the history of government growth.

Chapter 23 develops the “why” question of public choice: why do governments behave as they do? The chapter presents voting models, an analysis of elections and the behavior of legislators, and a realistic look at program implementation.

## LEARNING AIDS IN THE TEXT

Several elements in the text are specially designed as tools to help students learn:

- **Topics in This Chapter** Every chapter begins with a list of the key concepts introduced in the chapter. It offers a convenient way to both preview and review the chapter’s contents.
- **Focus** Real-world events and opinion in these boxed applications show how economic principles operate in everyday life.
- **Public Policy in Action** A special box on a public or controversial issue at the end of most chapters analyzes economic aspects of public life and politics.
- **Key Terms** The definitions of terms comprise a complete learning system. When a term is first introduced, it is printed in boldface in the text. In a nearby box is a formal definition, and the term is also listed at the end of the chapter with other key terms. Finally, all key terms and their definitions are brought together in the Glossary at the end of the text.

- **Questions and Problems** These unusually lively and pertinent questions and problems were written by Albert E. Parish, Jr., who is also the author of the *Student Workbook*, the *Test Bank*, and the *Instructor’s Guide*. Solutions to odd-numbered questions and problems are given at the end of the text; solutions to even-numbered problems are in the *Instructor’s Guide*.

## TEXT SUPPLEMENTS

*Principles of Microeconomics* is supported by several supplements for students and instructors. All print supplements were written by Albert E. Parish, Jr., of Charleston Southern University.

The *Student Workbook* is especially strong. Each chapter offers students a varied menu of activities and learning aids, including a detailed review of the most important equations and graphs from the text. Other features include a brief explanation of important concepts, chapter objectives and summary, and approximately 40 questions and problems of varying difficulty. One or two problems in each chapter require the use of calculus; these are clearly identified. Complete solutions at the end of the chapter help students stay on track.

The *Test Bank* provides approximately 1,250 multiple-choice questions, many with graphs that the students must analyze. The *Test Bank* is available in four formats: IBM, Macintosh, Apple, and a print version. With the computerized versions, instructors can easily edit the questions or add their own, including graphics.

The *Instructor’s Guide* consists primarily of the problem solutions not given in the text. It also includes chapter outlines and our rationale for each chapter—why we wrote it as we did.

The Transparencies set pulls together the most important graphs from the text, printed in two colors and ready for use with an overhead projector.



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J. V. H.  
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