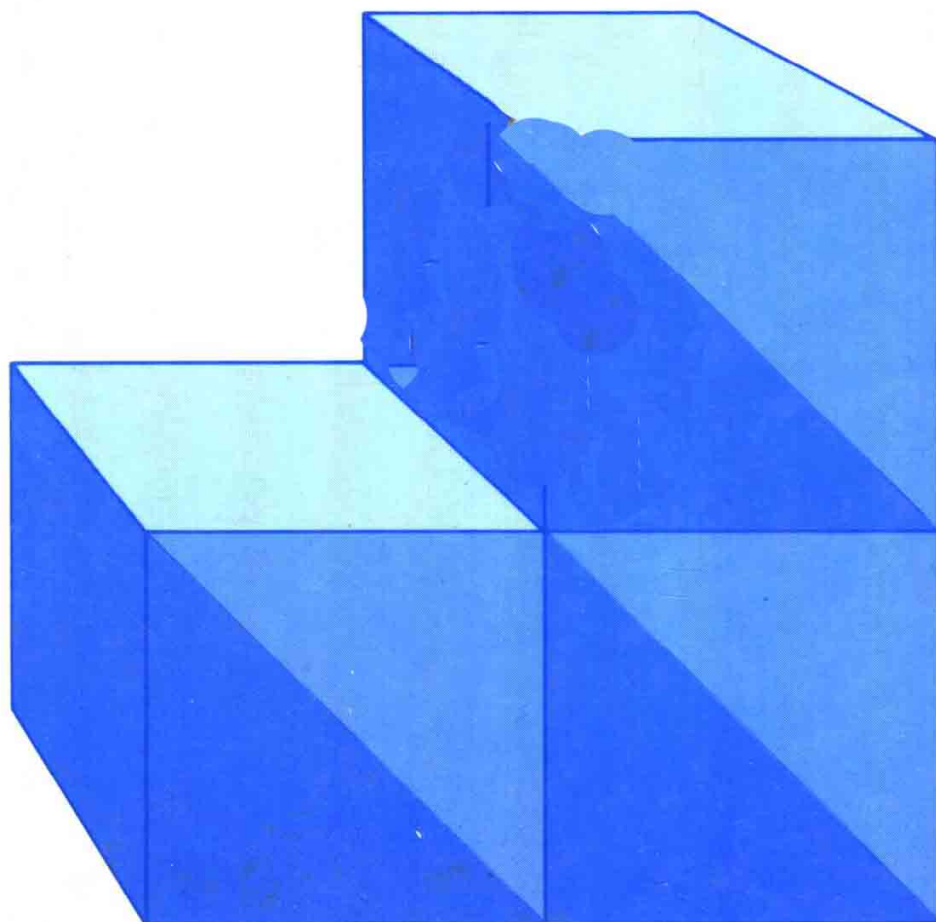


PRICE THEORY AND APPLICATIONS

THIRD EDITION



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PRICE
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AND
APPLICATIONS

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PREFACE

Economics is a science designed to explain the real world. So it is not only dull but fundamentally misleading to present “theory” in the absence of “applications.” I have provided dozens of boxed Examples throughout this book to indicate specific ways—and, of course, specifics are essential here—in which microeconomic theory does indeed illuminate the real world. These discussions, based as they usually are upon recent research reported in scholarly books or journals, also help the student gain some idea as to the scientific work that economists actually do. (This is a story that needs telling. Judging from the media picture, the economics profession is nothing but a squabbling band of rival soothsayers. That there are actual scientific results in economics may be a surprise to most students.) In addition to these brief Examples, many applied topics—among them the negative income tax, rationing of consumption goods, monopolistic suppression of inventions, and minimum-wage laws—are discussed in more extended fashion at appropriate places in the text.

Two other methodological points warrant mentioning. First, I try to emphasize that economics is a way of thinking, something over and above a body of facts or propositions *to be memorized*. *How often have we heard a student say, “Prof, tell me what pages you want me to learn and I guarantee I’ll know every word.”* Such a student is always chagrined to hear that memorization is not enough. On the other hand, not everything can be left to inspiration; there is no blinking the fact that some hard slogging work is required. In economics, as elsewhere, there is no easy royal road to true understanding. Only by working through actual models can a sound base for understanding be built.

Second, traditional economics has been narrow in its conception of man, and insular in ignoring the problems addressed and results achieved elsewhere in the social sciences. (The opposite side of the coin is the very true proposition that economics has much to contribute to these other disciplines.) I have therefore made use of materials from scientific work in anthropology, psychology, political science, social biology, etc., wherever economic principles or methods could be illuminated thereby. To cite but one instance, students frequently complain that a businessman can hardly be expected to engage in anything as subtle and complex as marginal analysis. But biologists have discovered numerous instances where marginal analysis correctly predicts animal behavior (see “Birds Do It! Bees Do It!” in Chapter 2), and we know that birds and bees are dumber than businessmen. On the side of technique, only recently has the classical scientific method of *experiment* begun to play an important role in economic research. This is a very exciting development. Accordingly, I have devoted quite a few of the Examples to reports of experimental studies. One important instance: while the conditions of perfect competition are never fully satisfied in the real world, we have learned from experiments that even highly imperfect markets may generate results close to the theoretical ideal (see “Experiments in Perfect and Imperfect Markets” in Chapter 13).

As to coverage and level of difficulty, *this is not a minimal book*. Partly to meet the needs of a range of users, partly to build in growth potential (so that the text can serve as reference and guide for later self-study or coursework), or perhaps just because there’s so much fascinating material I couldn’t bear to exclude, there is more here than can usually be covered in briefer (one term or less) intermediate-theory courses. To meet the needs of instructors and students in briefer or less demanding courses, a shorter book-within-the-book exists in the series of *Core Chapters* (Chapters 1-8 and 11-13). Also, if time pressures so dictate, certain more advanced or tangential discussions (set apart in specially marked sections or sub-sections within the chapters) can be omitted. A two-term undergraduate course, I have found, however, can cover all or almost all the material in the text.

A special effort has been made to provide aids to understanding, which now include the following: (1) Explanatory descriptive legends accompany the diagrams; a student often can efficiently review a chapter by reading these legends in sequence. (2) Each chapter is followed by a Summary and two groups of Questions—a first group for review, and a second for further thought and discussion. Answers to about half the questions are provided in the back of the book. (3) As an innovation for this edition, a good many numerical exercises have been introduced (with worked answers) right into the main text.

Users of the preceding edition will find substantial organizational changes in the text. Condensation has permitted elimination of two chapters, and the order of topics has also been modified. Part One (“Introduction”) and Part Two (“Preference, Consumption, and Demand”) continue as before. Part III now moves directly to “The Firm and the Industry,” viewed in terms of product-

market prices and outputs. The more difficult factor-market aspects (production, factor demand, etc.) are covered together with the individual's factor-supply decisions in a separate Part IV ("Factor Markets and Income Distribution"). Part V takes up "Exchange," Part VI "Intertemporal Analysis," and Part VII "Political Economy."

A number of features of this book are, I claim, improvements upon conventional textual coverage. Among them I will mention:

1. Traditional intermediate texts offer no price-theoretic explanation for *money*. In Part V the analysis of exchange as a costly economic activity provides the foundation for understanding how a monetary commodity works. And even earlier, in Part III, it will have been indicated that the existence of business firms is also a consequence of the costliness of exchange.
2. "Monopolistic competition" is covered in Part III under a more general heading—variation of product. The topics under this heading also include equilibrium of product *quality* and of product *assortment*.
3. Saving and investment are tied to the underlying theory of intertemporal choice and equilibrium in Part VI. The coverage here provides a bridge to macroeconomics, and to the business-finance literature.
4. In Part VII on "Political Economy," after a treatment of the traditional normative issues of welfare economics in Chapter 15, the final Chapter 16 moves on to a *positive* analysis of government. Two views of the state, a voluntarist or public choice model versus an exploitative or conflict model, are contrasted. The novel theory of conflict interactions offered here represents, I believe, the first time this overwhelmingly important topic has been addressed in an intermediate economics text.

As to the mathematics required, as in previous editions calculus techniques are employed only in marked mathematical footnotes. But the delta (Δ) notation used in defining marginal concepts will be naturally translated into derivative or differential terms by the student equipped with calculus. The instructor should, of course, warn students that further command of college math will be necessary in order to study economics beyond the intermediate level.

Whether a proper balance has been struck between coverage and simplicity, between theory and application, between technical accuracy and intuitive suggestion, only the reader can judge. I will be grateful for guidance on this point from instructors and students, as well as for specific corrections where errors appear.

As in past editions, a Teacher's Manual for this third edition of *Price Theory and Applications* is available to instructors, upon request, from the publisher. For the first time with this edition, a Study Guide to accompany the text will be available for purchase by students. The Study Guide has been prepared by Professor Michael Sproul of Loyola Marymount University of Los Angeles.

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In its several editions this book has had the advantage of helpful reviews by many colleagues, including Professors Daniel S. Christiansen, Robert Dorfman, Ross Eckert, David L. McNicol, Edwin Mills, R. Charles Moyer, Allen R. Sanderson, and Lloyd M. Valentine. I am particularly grateful to the faculty members, students, and other readers who independently took the trouble to send me valuable corrections and comments. Thanks are due to my research assistants over the years, who have worked mainly on the Examples used in the text and on the questions and answers at the end of each chapter: Charles Knoeber for the first edition; for the second edition Ralph Cole, Gary Galles, David A. Hirshleifer, Carroll Shelor, M. Holly Crawford, Shirley Svorny, and Richard Tontz; and for this third edition Michael Sproul and Laurel Clark. As in the previous edition, typing and editorial assistance of an exceptional order was provided by Lorraine Grams, nobly assisted by Carole Wilbur.

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□ Economics concerns decisions—choosing among actions. The first thing to appreciate about decisions is that every possible course of action has its pros and cons, benefits and costs. Tennis may trim your figure and improve your disposition, but take time from your studies and damage your joints. If you drop out of college you can start earning an income right away, but completing your degree might lead to a more rewarding lifetime career. And similarly in business and government: every conceivable decision—whether it be the corner grocer putting a price-tag on potatoes or the Congress of the United States voting on a declaration of war—will encounter arguments for and against. How then can we ever decide? Economics develops methods for determining the *best* action through a systematic assessment of all the relevant pros and cons.

Economics also studies what happens when different people's decisions *interact*, as they usually will. If the grocer raises the price of potatoes, customers are likely to reduce their purchases—so that the higher price may not, after all, yield the grocer any bigger profit. And similarly when it comes to social problems: once the likely responses of other people are taken into account, the outcome often turns out to be much less attractive than first appears. Take a scheme that might seem at first glance to alleviate some social anguish, for example a law requiring all grocers to cut food prices in half so that the poor can afford to buy more to eat. Before concluding that this is a good idea we would surely have to allow for the reactions of the grocers and of their suppliers—will they be able and willing to provide grocery products at the lower prices? (A law forcing sellers to cut prices in half may seem like something unlikely ever to happen. But when, for example, apartment rents are frozen during a generally inflationary period, in *real* terms the suppliers of housing services are being compelled to accept a sharp price reduction.)

Economics has been called the dismal science because economists are so often the ones who have to bring the bad news: to wit, that a superficially appealing project or scheme may turn out not to be such a great idea once the responses of *all* the affected individuals are properly taken into account.

Let's look at some other examples. The following Table lists a number of social problems with possible "solutions." (Notice that sometimes the same problem has diametrically opposed "solutions.") Take a moment yourself to think of possible objections to each solution listed. Then note the "hidden" adverse consequences mentioned for each.

-
- | | |
|---|---|
| <p>1. Our country's steel producers are threatened by competition from imports.</p> <p><i>Possible "hidden" consequences: (a) Our country's steel consumers will have to pay more for steel and so will consume less. (b) Foreigners, once they sell fewer goods to us, will buy less of our country's exports.</i></p> | <p>Impose a tariff on imported steel.</p> |
| <p>2. Apartment rentals have gotten very high.</p> <p><i>Possible "hidden" consequences: (a) Landlords will skimp on upkeep and repair of apartments. (b) In the longer run, fewer rental units will be constructed.</i></p> | <p>Freeze apartment rents.</p> |
| <p>3. Women who are "mere housewives" are living unfulfilled lives, not contributing their talents to society at large.</p> <p><i>Possible "hidden" consequences: (a) Women's wages in market employment will tend to fall. (b) Husbands, having more household chores, will be less productive at work.</i></p> | <p>Encourage females to leave the home and find market employment.</p> |
| <p>4. Commercial fishing for tuna kills large numbers of dolphins.</p> <p><i>Possible "hidden" consequences: (a) Consumers will have to pay more for tuna. (b) Foreign fishermen will take over more of the tuna trade.</i></p> | <p>Require our nation's fishermen to use special nets that permit dolphins to escape.</p> |
| <p>5. Medical costs are very high.</p> <p><i>Possible "hidden" consequences: (a) Doctor's bills and hospital charges will rise even more than they had previously. (b) Taxes will have to go up.</i></p> | <p>Have government pay a share of medical bills, especially for the poor.</p> |
| <p>6. Huge numbers of people are becoming addicted to drugs.</p> <p><i>Possible "hidden" consequences: (a) Street prices of narcotics will rise, forcing addicts to engage in more anti-social behavior to feed the habit. (b) Huge financial stakes in the narcotics trade will lead to more corruption of the police and judiciary.</i></p> | <p>Toughen enforcement of narcotics laws.</p> |
| <p>7. Same as number 6.</p> <p><i>Possible "hidden" consequences: Increased availability and lower prices of narcotics will widen usage and addiction.</i></p> | <p>Abandon enforcement of narcotics laws.</p> |
-

How many of these "hidden" consequences did you think of yourself? [If you got them all, perhaps you don't need to study this book.] Are they all valid, do you think? Are there others that should be added? Finally, why is it that such consequences are so often overlooked? [*Probable answer: Because they involve something not directly visible here and now, changes in people's behavior as they react to the imposed "solution."*]

Discovering undesirable consequences does not necessarily imply that a proposal should be rejected. All the consequences, favorable and unfavorable, must be considered and weighed. But when people become committed to one side of the question they generally don't want to listen to contrary arguments. So learning to think like an economist may not make you very popular, although it will make your private decisions more effective and your views on social issues more balanced.

The economist is thus the opposite of the *advocate*, someone who looks only for arguments favoring his or her side of the question. Of course, there is a time

and a place for advocacy. If you were on trial for murder you'd probably not want your lawyer to present the evidence for your guilt with the same enthusiasm as the evidence for your innocence. And we all know of people who can never stop saying "But, on the other hand . . .," who are incapable of needed action. ("The native hue of resolution is sicklied o'er by the pale cast of thought"—*Hamlet*.) Nor can the economist replace the *prophet* and *poet* who inspire us to aim at ideal goals. Economics does not give us our goals, but only weighs the consequences of trying to achieve them. Prophets and poets, men and women of action, and even advocates are needed elements in society. But so are economists.

1.A

ECONOMICS AS A SOCIAL SCIENCE

It may have struck you that the outlook attributed to the economist is essentially the same as that of the *scientist*. And indeed this book is an introduction to economics as a science: as a body of analytical models (theories) that yield verifiable implications about the real world. More specifically, economics is a *social science*; it aims to explain how human beings interact with one another in the world of affairs.

1.A.1 ☐ Is Economics a Science?

Is economics really a science? Let's first hear from a cynic: "Anyone who reads the papers knows that economists are always disagreeing with one another—that doesn't give me much confidence that economics has arrived at scientific truth. Furthermore, if economics can scientifically predict financial and commercial events, why aren't all economists rich?"

Differences among economists do not necessarily mean that economics is unscientific. All sciences advance through disagreement, as new theories challenge established ideas. In astronomy the geocentric model of Ptolemy was opposed by the new heliocentric model of Copernicus; in chemistry Priestley supported the phlogiston theory of combustion while Lavoisier propounded the oxidation theory; and in biology the creationism of earlier naturalists was countered by Darwin's theory of evolution. It is not universal agreement but rather the willingness to consider evidence that signals the scientific approach. For Galileo's opponents to disagree with him about Jupiter's moons was not unscientific of itself; what was unscientific was their refusal to look through his telescope and see. An inspection of economics texts and journals will reveal that current great issues, whether it be the monetarist versus fiscalist hypotheses in macroeconomics, or the determinants of labor's share in distribution theory, or the effectiveness of centralized planning for achieving economic growth, are under continuous scientific evaluation. Failure to arrive at a general scientific consensus¹ may be due to the complexity of the problem or the incompetence of the investigators, but there will always be unresolved issues in any living science.

¹Scientific consensus need not imply general agreement as to *policy*, however. See the discussion of "Normative versus Positive Analysis" in Section 1.A.3 below.