Preface to the Fourth Edition

One of the most exciting areas of economic policy is government regulation and antitrust. These efforts affect virtually all aspects of our lives, ranging from the food we eat to the prices we pay. This policy area has undergone dramatic changes in the past three decades. The traditional topics in this area would have included such issues as setting appropriate trucking rates as well as conventional antitrust issues. However, in many areas of economic regulation there has been substantial deregulation as market forces in a larger and more competitive economy have been given more rein. New areas of economic regulation have developed, such as those pertaining to the regulation of cable television rates and homeland security. In addition, there has been an entirely new wave of government regulation, chiefly relating to the environment and safety, which involves a commitment of economic resources that has continued to escalate.

The vibrancy of regulatory and antitrust policy is reflected in recent economic events. The settlement of the states' lawsuits against the cigarette industry for more than $200 billion has spawned other litigation efforts that have blurred the boundary between regulation and litigation. Environmental policies have continued to dominate in terms of the economic costs of regulation, recently raising difficult ethical issues such as whether protecting the lives of the elderly is worth as much as protecting the lives of the young. Economic deregulation in areas such as cable television, natural gas, intrastate trucking, electric power, and telecommunications has continued the pattern of deregulation, sometimes generating profound changes. The aftereffects of the Telecommunications Act of 1996 are still being felt in markets ranging from cable television to long-distance telephone service. In spite of the debacle in California in 2000, state electric power markets continue to be a hotbed of regulatory restructuring. In enforcing our antitrust laws, the U.S. Department of Justice has aggressively pursued price fixing and has levied fines in the hundreds of millions of dollars and imposed prison sentences for many high-level executives. It waged a successful battle against Microsoft, from which the latter emerged mostly unscathed. At the same time, the past decade has witnessed megamergers, including Time Warner/America Online, Bell Atlantic/GTE, Daimler-Benz/Chrysler, Travelers/Citicorp, BPE/Amoco, and Exxon/Mobil.

The emerging character of antitrust policies and regulation has been accompanied by an intellectually vibrant economic literature. Using frontier tools such as game theory, economists have developed new theories to characterize firm behavior and to assess which market contexts warrant government intervention. Our view of which situations of apparently excessive market power warrant government interference has changed dramatically.

Economists have also developed new methodologies to deal with emerging health, safety, and environmental regulations. These regulatory efforts were largely nonexistent two decades ago, and the economic literature addressing these issues was similarly undeveloped. In this book we will attempt to convey the general character of the principles guiding economic regulation in this and other areas, as well as the most salient aspects of these policies. While the emphasis is on U.S. regulatory policies, the principles are quite general.

The traditional emphasis of economics textbooks on business and government is on the character of regulations and antitrust policies. This treatment is built around the question, What are these policy mechanisms, and how do they operate?

The orientation of *Economics of Regulation and Antitrust* is quite different. Rather than start with the institutional aspect of regulatory and antitrust policies, we begin with the economic issues at stake. What particular market failures provide a rationale for government intervention? How can economic theory illuminate the character of market operation, the role for government action, and the appropriate form of government action? What do formal empirical analyses of economic behavior and the effects of government intervention indicate about the direction that this intervention should take? To provide the most up-to-date answers to these important questions, we base our analysis on new developments in economic theory and empirical analysis that have been specifically devised to further understanding of regulations and antitrust policies.

Because this has been a fertile area of economic research for several decades, a large body of economic reasoning can be brought to bear in analyzing these issues. *Economics of Regulation and Antitrust* is the only economics textbook whose focus derives from the insights that economic reasoning can provide in analyzing regulatory and antitrust issues. This approach contrasts with previous treatments, which concentrate on the character of these policies and relegate the economic issues to a minor role.

This approach, which we established in earlier editions, has been carried forward in this edition as well. New topics have been added. In chapter 2 and wherever possible throughout the book, we have updated the statistics regarding the role of government regulation in the economy. Chapter 2 also includes a new discussion of regulatory oversight during the George W. Bush administration, as well as new information on regulatory cost trends updated to the current century.

Part I has undergone a major revision to reflect advances in theory of antitrust and the major antitrust cases of recent years. A section has been added to the chapter on price fixing that focuses on enforcement and recent policy innovations with the revision of the corporate leniency program and federal sentencing guidelines. We review the economics behind the corporate leniency program—how does it work in catching price fixers?—and current practice for determining penalties. Though the authorities have been active in fighting price fixing, the most controversial and significant cases have dealt with monopolization. To take account of these cases and to encompass new understanding about monopolization practices, chapters 8 and 9 have been substantially revised. Using simple examples, modern game-theoretic analyses of raising rivals' cost, tying, and exclusive dealing are reviewed and related to the merger of Time Warner and the Turner Broadcasting System and to the exclusionary practices used by Visa and MasterCard. Then, in chapter 9, we provide an analysis of how predatory pricing can work and flesh out the implications of recent judicial decisions. Attention is also given to the exclusionary practice known as "refusal to deal," with a focus on its interaction with intellectual property rights—an issue that arose in the Federal Trade Commission's case against Intel. Our coverage of Microsoft is significantly extended to include an analysis of the economics of network externalities. Finally, we have added an in-depth examination of the economics of aftermarkets and its relation to the historic *Kodak* decision by the U.S. Supreme Court.

Our emphasis on economic principles in no way implies a neglect of the pertinent institutional features. This text includes extensive case studies of major areas of regulation and antitrust policy, including entire chapters devoted to such issues as government merger policies, cable television regulation, and transportation regulation. Indeed, this book is unique in its extensive coverage of several of these topics, as well as issues such as the role of the White House regulatory oversight process. Although we discuss essential aspects of these regulations and their performance, our intent is not to provide students with a list of case names, government rules, and other institutional details. Rather, we hope to provide students not only with insights pertinent today but also with the economic tools to analyze the implications of regulations and antitrust policies a decade from now. Future policies may have a quite different structure from those currently in place, and it is the economic framework we use to approach these issues that will be of lasting value.

Part II, dealing with economic regulation, updates our earlier coverage of the restructuring of the telecommunications and electric power industries. An analysis of what went wrong in the California energy market in 2000–2001 is provided, along with more extensive coverage of how energy markets are being deregulated at the state level. Responding to an evolving technological landscape, the Telecommunications Act of 1996 was the first major piece of legislation in this industry since the Federal Communications Commission was formed in 1934. The impact of this act is a "work in progress," and we update how it is raising cable television rates and lowering long-distance telephone rates. Incentive regulation—which is designed to control prices while inducing regulated firms to be efficient—is increasingly used in place of traditional regulatory practice. Our coverage has expanded to provide a more detailed investigation of earning sharings, price caps, and yardstick regulation, with attention to how they are applied to the electric distribution and local telephone markets. New case studies of regulation are added, such as the *44 Liquormart* decision, in which the U.S. Supreme Court struck down a state prohibition against advertising of liquor prices. Finally, appendices have been added that develop simple models to establish the rationale for regulating a natural monopoly (chapter 10) and how interest group competition influences regulation (chapter 16).

Part III, on social regulation, includes evidence on the cost per life saved for different government regulations through the first years of the George W. Bush administration. Chapter 20 now includes international evidence on the value of statistical life, as well as increased discussion of risk-risk analysis. The most extensive changes took place with respect to the environmental regulation discussion in chapter 21; extensive changes are appropriate because new environmental regulation continues to be the most costly regulatory effort. That chapter now includes a discussion of the key generational issues that lie at the heart of current environmental debates. Should risks to the lives of the young be valued the same as risks to those with a very short life expectancy? How should the risks to future generations be valued as compared to our own well-being? More generally, how should we attach benefit values to environmental goods, which seldom are traded in markets and may be valued simply because of their existence, even if people will never use them? The environmental chapter also includes a new discussion of the siting of nuclear wastes and a more extensive treatment of conservative risk assessment practices. The most important new development with respect to the product safety issues treated in Chapeter 22 has been the regulation through litigation movement. That chapter now discusses this phenomenon using the breast implant litigation as the principal case study. There is also a new presentation of the proper use of values of statistical life to determine the appropriate levels of safety in product liability cases. Chapter 23 now includes a discussion of the changes in the OSHA enforcement strategy enacted by the Clinton and George W. Bush administrations.

The minimum economics background needed for this book is usually an introductory price theory course. This background will enable students to grasp all of the empirical material and most of the theoretical developments. In some cases, the discussion advances to a level at which some background in intermediate microeconomic theory is desirable, but these more difficult sections can be omitted. A unique feature of this book is that it brings to bear on these issues new developments in industrial organization and game theory. The presentation of this more advanced material is self-contained, does not involve the use of calculus, and is incorporated in chapters in such a way that it can easily be omitted by an instructor with a different course emphasis.

We have used drafts of this book in our teaching at the undergraduate level, in business school curricula, and in teaching law students. Others have used this book in public policy schools. In no case did we use all of the book in any one course. Although the book's coverage is nearly encyclopedic, it is still not all-inclusive. It is doubtful whether any single course can successfully cover all the material included in this book, except perhaps in an intensive two-semester sequence. Because instructors have a variety of different interests and instructional needs, we have structured the book in a manner that will facilitate its use in a variety of contexts.

Organization of the Book

Economics of Regulation and Antitrust consists of two introductory chapters, followed by three parts. The beginning of the book sets the stage and introduces some of the overriding issues, such as ascertaining what the objective is that government regulators maximize and considering the appropriate division of labor between the states and the federal government.

The following three parts of the book present the core of the analytical material. Part I focuses on antitrust policy, part II deals with economic regulation, and part III focuses on social regulation and patent policy. Each of these parts is structured in a similar manner. The first chapter of each part provides an overview of the key economic issues and the pertinent methodology that will be employed. We discuss the principal market failures in this context, and how economic analysis is used to address them. In every case, the first chapter of each part can be viewed as essential reading. The instructor can then select which of the subsequent case studies to use. Chapters that require the student to have read another chapter within that part, other than the introductory chapter, are noted in the following paragraphs. Otherwise, chapters within a part can be assigned in whatever order the instructor wishes. Any chapters that the instructor wishes to omit may be excluded.

Part I, which focuses on antitrust policy, includes a healthy dose of the analytical tools of modern industrial organization. Chapter 3 is an introductory overview of antitrust policy and of the other chapters in part I. Efficiency and technical progress are explained in chapter 4 as tools for evaluating policies. At least the first half of this chapter is probably necessary reading for understanding chapters 5–9.

Chapter 5, on oligopoly and collusive pricing, is novel in introducing oligopoly through a game-theoretic approach and then relating the theoretical models to antitrust cases. The discussion of market structure and entry deterrence (chapter 6) is mostly analytical; it can be skipped by instructors under time pressure in courses with a primary focus on antitrust cases. The remaining three chapters—horizontal and conglomerate mergers (chapter 7), vertical mergers and restrictions (chapter 8), and monopolization and price discrimination (chapter 9)—are stand-alone chapters that can be assigned or not, depending on the instructor's preference.

Part II addresses the role of economic regulation. As evidenced by the dozen or so case studies in this part, economic regulation has been an integral part of the U.S. economy. Although there has been substantial deregulation of airlines, trucking, and long-distance telephone services, the debate over appropriate regulatory policies and reregulation is still very active.

An overview of economic regulation, including its historical development and a summary of regulatory practices, is provided in chapter 10. This chapter also provides the most in-depth textbook discussion of the efforts of social scientists to understand the extent of government regulation. The remainder of part II comprises two areas of interest. Chapters 11–15 cover the regulation of natural monopolies. The recent theory of natural monopoly is presented in chapter 11, while chapter 12 reviews actual regulatory practices with respect to electric utilities and local telephone companies. Although regulation is the standard U.S. government response to natural monopolies, alternatives are available; these are discussed in chapters 13 and 14. Chapter 13 addresses a new and promising approach, franchise bidding, and provides a detailed case study of cable television. A more traditional alternative is that of government enterprise. It is reviewed in chapter 14, along with a comparative analysis of government ownership and regulation with respect to electric utilities. Then, in chapter 15, some dynamic issues related to monopoly regulation are explored in the context of the rapidly changing long-distance telecommunications market.

The regulation of markets that are potentially competitive receives in-depth treatment in the remaining three chapters of part II. A theoretical investigation of the effects of regulation is provided in chapter 16. These ideas are then applied to regulation in the transportation and energy industries. Chapter 17 closely examines airlines and surface freight transportation (in particular, trucking and railroads), while chapter 18 covers the crude oil and natural gas industries.

Part III focuses on the new forms of risk and environmental regulation that emerged primarily after the 1970s. Chapter 19 introduces the principal methodological issues, including market failures such as externalities and inadequate risk information, the primary economic test of benefit-cost analysis that applies in this area, and the rather daunting task that economists face in assigning dollar values to outcomes such as a five-degree temperature change caused by global warming.

The task of assigning market prices to outcomes that, by their very nature, are not traded in efficient markets is the focus of chapter 20. The primary case study concentrates on how economists attempt to assign a dollar value to risks to human life, which illustrates how economists have attempted to assess the pertinent trade-off rates that should be used in evaluating government policies. The next four chapters deal with various types of social regulation policies, including environmental protection regulation (chapter 21), product safety regulation (chapter 22), occupational safety regulation (chapter 23), and pharmaceutical regulation (chapter 24). Chapter 22 presents the greatest variety of social regulation issues that have been of long-term interest to researchers in industrial organization and in law and economics. A major strength of all these chapters is that they confront the current policy issues now under debate, including topics such as global warming, the role of product liability law, and the social consequences of smoking.

Chapter 24, on patents and pharmaceuticals, combines the theory of patents with a case study of their application to one of the most technologically progressive U.S. industries. It is a particularly timely chapter, given the current interest in health care reform and innovation.

Suggested Course Outlines

An intensive one-year course could cover this entire book. However, in most cases, instructors will be using the book in a context in which it is not feasible to cover all the material.

In this section we suggest course outlines that focus on entire chapters that are most appropriate for different course approaches. Most of the chapters include a series of sections that can be profitably assigned for student reading in separable units. This approach is especially useful for classes in which students may lack previous economic training. One of the authors, for example, has included extensive portions of part II of the book in table A as part of a more institutionally oriented course, where the focus is on the case studies and the most central economic principles.

In table A we have identified six different course approaches and the pertinent chapters that can be assigned for each one. The first type of course is the balanced one-quarter course. Such a course would include the introductory material in chapters 1 and 2 as general background; chapters 3–5, 7, and 9 from part I; chapters 10 and 12 from part II; and chapters 19–21 from part III.

The second course approach is a conventional antitrust course. It would place the greatest reliance on chapter 17 and part I of the book, which includes chapters 3–9. Instructors who wish to provide a broader perspective on some of the other topics in regulation might augment these chapters with the indicated chapters for the one-quarter course.

A course focusing on economic regulation would include primarily the introductory section and part II of the book, or chapters 1–2, 4, 10–18, 22, and 24. Similarly, a course focusing on social regulation would include the introductory section and part III of the book, or chapters 1–2, 4, and 19–24. In situations in which we have taught such narrowly defined courses, we have often found it useful to include the material from the balanced one-quarter course as well, to give the student a broader perspective on the most salient economic issues in other areas of government intervention.

Given the frontier treatment of industrial organization in part I, this book could also be used in a policy-oriented course on industrial organization. With chapters 3–6 providing the theoretical foundation in industrial organization, an instructor could select from the remaining chapters to cover a variety of policy issues. A suggestion is to use chapter 9 (its coverage of monopolization practices follows up on the theory of strategic entry deterrence in chapter 6), chapters 10, 13, and 16–18 (to examine how different types of economic regulatory structures can affect competition), and chapters 22 and 24 (to assess efforts such as product quality regulation).

The institutional course outline pertains to courses, particularly those in business schools, that wish to have a more institutional focus. For these courses, the objective is to focus on the empirical aspects of government regulation and antitrust policies, as well as the character of these policies. Moreover, these courses would require no advanced undergraduate economic methods.

The final course outline is a professional school survey, such as the one-semester course at Harvard Law School, where there is a mix of students' economic backgrounds. Many chapters are included in their entirety: 1–4, 7, 10, 11, and 19–23. That course also includes all but

Table A
Suggested Course Outlines

	Introduction		Part I							Part II									Part III					
Course Focus	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Balanced one-quarter course	✓	✓	✓	✓	✓		✓		✓	✓		✓							✓	✓	✓			
Antitrust			✓	✓	✓	✓	✓	✓	✓								✓							
Economic regulation	✓	✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	✓				✓		✓
Social regulation	✓	✓		✓															✓	✓	✓	✓	✓	✓
Industrial organization			✓	✓	✓	✓			✓	✓			✓			✓	✓	✓				✓		✓
Institutional	✓	✓	✓		✓		✓				✓	✓							✓	✓	✓	✓	✓	✓
Professional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	

some of the more technical material of chapters 5, 6, 8, 9, and 12. Much of the remaining chapters is also included in the course: one case study such as cable TV from chapter 13, the taxicab material from chapter 16, one example such as airlines from chapter 17, and the basics of price ceilings from chapter 18. Thus, many of the subsections of chapters are self-contained entities, so that instructors need not sacrifice substantive topics if the backgrounds or interests of students do not make it feasible to cover an entire chapter. The chapters in the book that meet these tests and can be readily grasped with an introductory economics background are also indicated in table A.

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