

Contents

| | | |
|----------|--|-----------|
| | Preface to the Third Edition | xix |
| 1 | Introduction | 1 |
| | The Rationale for Regulation and Antitrust Policies | 2 |
| | Antitrust Regulation | 3 |
| | The Changing Character of Antitrust Issues | 4 |
| | Reasoning behind Antitrust Regulations | 4 |
| | Economic Regulation | 5 |
| | Development of Economic Regulation | 6 |
| | Factors in Setting Rate Regulations | 6 |
| | Health, Safety, and Environmental Regulation | 7 |
| | Role of the Courts | 8 |
| | Criteria for Assessment | 9 |
| | Questions and Problems | 10 |
| | Recommended Reading | 10 |
| | Appendix | 11 |
| 2 | The Making of a Regulation | 13 |
| | State versus Federal Regulation: The Federalism Debate | 14 |
| | Advantages of Federalism | 15 |
| | Advantages of National Regulations | 16 |
| | The Overlap of State and Federal Regulations | 17 |
| | The Character of the Rulemaking Process | 18 |
| | The Chronology of New Regulations | 18 |
| | Nature of the Regulatory Oversight Process | 22 |
| | The Nixon and Ford Administrations | 23 |
| | The Carter Administration | 24 |
| | The Reagan Administration | 26 |
| | The Bush Administration | 26 |
| | The Clinton Administration | 27 |
| | Regulatory Reform Legislation | 27 |
| | Benefit-Cost Analysis | 28 |
| | Discounting Deferred Effects | 30 |
| | Present Value | 32 |
| | The Criteria Applied in the Oversight Process | 34 |
| | Regulatory Success Stories | 34 |
| | Promotion of Cost-Effective Regulation | 35 |

| | | |
|----------|---|-----------|
| | Distortion of Benefit and Cost Estimates | 36 |
| | The Regulatory Role of Price and Quality | 37 |
| | The Impact of the Oversight Process | 37 |
| | The Cost of Regulation | 38 |
| | Other Measures of the Size of Regulation | 38 |
| | The Character of Regulatory Oversight Actions | 42 |
| | What Do Regulators Maximize? | 44 |
| | The Capture Theory | 44 |
| | Other Theories of Influence Patterns | 45 |
| | Comprehensive Models of Regulatory Objectives | 45 |
| | Conclusion | 46 |
| | Questions and Problems | 47 |
| | Appendix: Trends in Regulatory Agency Budgets and Staff | 48 |
| I | ANTITRUST | 59 |
| 3 | Introduction to Antitrust | 61 |
| | Industrial Organization Analysis | 61 |
| | Concentration | 63 |
| | Entry Barriers | 64 |
| | Product Differentiation | 64 |
| | Antitrust | 65 |
| | Enforcement and Remedies | 67 |
| | Exemptions from Antitrust | 71 |
| | Summary and Overview of Part I | 72 |
| | Appendix: Antitrust Statutes | 72 |
| | Sherman Act | 72 |
| | Clayton Act | 73 |
| | Federal Trade Commission Act | 74 |
| 4 | Efficiency and Technical Progress | 75 |
| | Economic Efficiency | 75 |
| | Partial Equilibrium Welfare Tools | 76 |
| | Monopoly-versus-Competition Example | 78 |
| | Oil Industry Application | 80 |
| | Some Complications | 81 |
| | X-Inefficiency | 84 |

| | | |
|----------|---|-----|
| | Monopoly-Induced Waste | 85 |
| | Estimates of the Welfare Loss from Monopoly | 86 |
| | Technical Progress | 88 |
| | Importance of Technological Change | 89 |
| | An R & D Rivalry Model | 91 |
| | Summary | 94 |
| | Questions and Problems | 95 |
| 5 | Oligopoly, Collusion, and Antitrust | 97 |
| | Game Theory | 97 |
| | Example 1: Advertising Competition | 97 |
| | Example 2: Compatibility of Standards | 99 |
| | The Strategic Form of a Game | 100 |
| | Nash Equilibrium | 101 |
| | Oligopoly Theory | 101 |
| | The Cournot Solution | 102 |
| | Other Models of Oligopoly | 108 |
| | Product Differentiation | 109 |
| | Collusion | 112 |
| | A Theory of Collusion | 112 |
| | Cartel Problems | 117 |
| | Collusion in Practice | 121 |
| | Antitrust Law toward Price Fixing | 125 |
| | Economic Analysis of Legal Categories | 126 |
| | Per Se Rule Cases | 127 |
| | Conscious Parallelism | 131 |
| | Summary | 135 |
| | Questions and Problems | 136 |
| | Appendix A | 137 |
| | Game Theory: Formal Definitions | 137 |
| | Appendix B | 138 |
| | The Addyston Pipe Case | 138 |
| | The Opinion of the Court | 140 |
| 6 | Market Structure and Strategic Competition | 143 |
| | Market Structure | 143 |
| | Concentration | 143 |

| | | |
|----------|---|-----|
| | Scale Economies | 150 |
| | Entry Conditions | 152 |
| | Dominant Firm Theory | 162 |
| | Static Analysis | 162 |
| | Dynamic Analysis: Limit Pricing | 165 |
| | Strategic Competition | 170 |
| | Limit Pricing | 171 |
| | Investment in Cost-Reducing Capital | 178 |
| | Raising Rivals' Costs | 182 |
| | Preemption and Brand Proliferation | 183 |
| | Summary | 186 |
| | Questions and Problems | 186 |
| 7 | Mergers | 191 |
| | Antitrust Laws and Merger Trends | 192 |
| | Reasons for Mergers | 195 |
| | Monopoly | 195 |
| | Economies | 195 |
| | Reducing Management Inefficiencies | 196 |
| | Other Motives | 198 |
| | Horizontal Mergers | 198 |
| | Benefits and Costs | 199 |
| | Effects of Airline Mergers | 204 |
| | Cases | 205 |
| | The 1992 Merger Guidelines | 210 |
| | Conglomerate Mergers | 213 |
| | Potential Benefits | 214 |
| | Anticompetitive Effects and Cases | 215 |
| | Summary | 217 |
| | Questions and Problems | 217 |
| 8 | Vertical Mergers and Restrictions | 219 |
| | Vertical Mergers | 219 |
| | Benefits | 219 |
| | Anticompetitive Effects | 223 |
| | Extension of Monopoly: Fixed Proportions | 229 |
| | Extension of Monopoly: Variable Proportions | 230 |

| | | |
|-----------|--|-----|
| | Cases | 232 |
| | Vertical Restrictions | 233 |
| | Resale Price Maintenance | 234 |
| | Territorial Restraints | 238 |
| | Exclusive Dealing | 240 |
| | Tying | 241 |
| | Summary | 253 |
| | Questions and Problems | 254 |
| 9 | Monopolization and Price Discrimination | 257 |
| | The Possession of Monopoly Power | 258 |
| | Intent to Monopolize | 262 |
| | Cases | 263 |
| | 1890–1940: Standard Oil and United States Steel | 263 |
| | 1940–1970: Alcoa and United Shoe Machinery | 268 |
| | 1970 to Present: Kodak, Cereals, IBM, and Others | 272 |
| | 1994–1998: Microsoft and Network Effects | 274 |
| | Predatory Pricing: Proposed Legal Definitions | 277 |
| | The ATC Rule | 279 |
| | The Output Restriction Rule | 280 |
| | Joskow-Klevorick Two-Stage Rule | 283 |
| | Price Discrimination and the Robinson-Patman Act | 284 |
| | Systematic Discrimination | 284 |
| | Unsystematic Discrimination | 290 |
| | Cases | 290 |
| | Summary | 292 |
| | Questions and Problems | 292 |
| II | ECONOMIC REGULATION | 295 |
| 10 | Introduction to Economic Regulation | 297 |
| | What Is Economic Regulation? | 297 |
| | Instruments of Regulation | 298 |
| | Control of Price | 298 |
| | Control of Quantity | 299 |
| | Control of Entry and Exit | 299 |
| | Control of Other Variables | 300 |

| | | |
|-----------|---|-----|
| | Brief History of Economic Regulation | 301 |
| | Formative Stages | 301 |
| | Trends in Regulation | 302 |
| | The Regulatory Process | 308 |
| | Overview of the Regulatory Process | 308 |
| | Regulatory Legislation | 309 |
| | Independent Regulatory Commissions | 309 |
| | Regulatory Procedures | 311 |
| | The Theory of Regulation | 313 |
| | Normative Analysis as a Positive Theory | 314 |
| | Capture Theory | 317 |
| | Economic Theory of Regulation | 318 |
| | Testing Theories of Regulation | 330 |
| | Summary and Overview of Part II | 334 |
| | Questions and Problems | 335 |
| 11 | Theory of Natural Monopoly | 337 |
| | The Natural Monopoly Problem | 337 |
| | Permanent and Temporary Natural Monopoly | 337 |
| | Subadditivity and Multiproduct Monopoly | 339 |
| | Alternative Policy Solutions | 344 |
| | Ideal Pricing | 344 |
| | Franchise Bidding | 356 |
| | Actual Solutions | 356 |
| | Summary | 358 |
| | Questions and Problems | 358 |
| 12 | Natural Monopoly Regulation and Electric Power | 361 |
| | The Rate Case | 362 |
| | Accounting Equation | 362 |
| | Regulatory Lag | 363 |
| | The Rate Level | 364 |
| | Rate Base Valuation | 364 |
| | Cost of Equity Capital | 366 |
| | The Sliding Scale Plan and Yardstick Competition | 368 |
| | Price Caps and Performance Standards | 369 |
| | Averch-Johnson Effect | 371 |

| | | |
|-----------|--|-----|
| | Rate Structure | 374 |
| | FDC Pricing | 375 |
| | Undue Discrimination | 377 |
| | Peak-Load Pricing | 379 |
| | Costs of Power Production | 379 |
| | Peak-Load Pricing Model | 381 |
| | Regulation/Deregulation of Electric Power | 386 |
| | Effectiveness of Price Regulation | 386 |
| | Trend toward Competition | 388 |
| | Summary | 392 |
| | Questions and Problems | 393 |
| 13 | Franchise Bidding and Cable Television | 395 |
| | Theory of Franchise Bidding | 395 |
| | Competition at the Bidding Stage | 397 |
| | Contractual Arrangements for the Postbidding Stage | 405 |
| | Assessment of Franchise Bidding | 409 |
| | Cable Television | 409 |
| | Historical/Regulatory Background | 410 |
| | Cable Television as a Natural Monopoly | 412 |
| | Franchising Process | 417 |
| | Assessment of Franchise Bidding | 418 |
| | Rate Regulation | 423 |
| | Is There a Role for Government Intervention? | 427 |
| | Summary | 429 |
| | Questions and Problems | 430 |
| 14 | Public Enterprise | 433 |
| | General Background | 434 |
| | Positive Theory of Public Enterprise | 435 |
| | Managerial Model of a Firm | 436 |
| | Managerial Model of a Private Enterprise | 437 |
| | Managerial Model of a Public Enterprise | 438 |
| | Comparison of Public and Private Enterprise | 441 |
| | Municipal Electric Utilities | 442 |
| | Pricing Behavior | 442 |
| | Allocative Efficiency Comparison | 444 |

| | | |
|-----------|--|------------|
| | Productive Efficiency Comparison | 446 |
| | Assessment of Private versus Public Utilities | 447 |
| | Airlines | 447 |
| | Summary | 450 |
| | Questions and Problems | 452 |
| 15 | Dynamic Issues in Natural Monopoly Regulation: Telecommunications | 453 |
| | Transformation of a Natural Monopoly | 453 |
| | Basis for Natural Monopoly Regulation | 454 |
| | Sources of Natural Monopoly Transformation | 457 |
| | Regulatory Response | 460 |
| | Intercity Telecommunications Market | 464 |
| | Local-Exchange Telecommunications Market | 476 |
| | Separation of Regulated Monopolies and Competitive Markets | 480 |
| | Benefits and Costs of Separation | 481 |
| | Breakup of AT&T | 484 |
| | Telecommunications and Computers | 486 |
| | The Future of the Telecommunications Industry: Digital Convergence | 487 |
| | Telecommunications Act of 1996 | 488 |
| | State of Competition | 489 |
| | Summary | 492 |
| | Questions and Problems | 493 |
| 16 | The Regulation of Potentially Competitive Markets: Theory and Estimation | |
| | Methods | 495 |
| | Theory of Price and Entry/Exit Regulation | 496 |
| | Direct Effects of Price and Entry/Exit Regulation: The Competitive Model | 496 |
| | Direct Effects of Price and Entry/Exit Regulation: The Imperfectly Competitive Model | 500 |
| | Some Indirect Effects of Price and Entry Regulation | 504 |
| | Some Indirect Effects of Price and Exit Regulation | 507 |
| | Regulation and Innovation | 509 |
| | Methods for Estimating the Effects of Regulation | 512 |
| | Overview of Estimation Methods | 512 |
| | Intertemporal Approach | 512 |
| | Application: New York Stock Exchange | 514 |
| | Intermarket Approach | 515 |

| | | |
|-----------|---|------------|
| | Productive Efficiency Comparison | 446 |
| | Assessment of Private versus Public Utilities | 447 |
| | Airlines | 447 |
| | Summary | 450 |
| | Questions and Problems | 452 |
| 15 | Dynamic Issues in Natural Monopoly Regulation: Telecommunications | 453 |
| | Transformation of a Natural Monopoly | 453 |
| | Basis for Natural Monopoly Regulation | 454 |
| | Sources of Natural Monopoly Transformation | 457 |
| | Regulatory Response | 460 |
| | Intercity Telecommunications Market | 464 |
| | Local-Exchange Telecommunications Market | 476 |
| | Separation of Regulated Monopolies and Competitive Markets | 480 |
| | Benefits and Costs of Separation | 481 |
| | Breakup of AT&T | 484 |
| | Telecommunications and Computers | 486 |
| | The Future of the Telecommunications Industry: Digital Convergence | 487 |
| | Telecommunications Act of 1996 | 488 |
| | State of Competition | 489 |
| | Summary | 492 |
| | Questions and Problems | 493 |
| 16 | The Regulation of Potentially Competitive Markets: Theory and Estimation Methods | 495 |
| | Theory of Price and Entry/Exit Regulation | 496 |
| | Direct Effects of Price and Entry/Exit Regulation: The Competitive Model | 496 |
| | Direct Effects of Price and Entry/Exit Regulation: The Imperfectly Competitive Model | 500 |
| | Some Indirect Effects of Price and Entry Regulation | 504 |
| | Some Indirect Effects of Price and Exit Regulation | 507 |
| | Regulation and Innovation | 509 |
| | Methods for Estimating the Effects of Regulation | 512 |
| | Overview of Estimation Methods | 512 |
| | Intertemporal Approach | 512 |
| | Application: New York Stock Exchange | 514 |
| | Intermarket Approach | 515 |

| | | |
|-----------|--|------------|
| | Application: Advertising of Eyeglasses | 516 |
| | Counterfactual Approach | 517 |
| | Application: State Usury Laws | 518 |
| | Measuring the Return to Price and Entry Restrictions: Taxicab Regulation | 522 |
| | Summary | 525 |
| | Questions and Problems | 526 |
| 17 | Economic Regulation of Transportation: Surface Freight and Airlines | 529 |
| | Transportation Industry | 529 |
| | Surface Freight Transportation | 531 |
| | Regulatory History | 531 |
| | Description of Regulatory Practices | 535 |
| | Effects of Regulation | 537 |
| | Recent Regulatory Policy | 550 |
| | Airlines | 552 |
| | Regulatory History | 552 |
| | Description of Regulatory Practices | 554 |
| | Effects of Regulation | 555 |
| | Competition and Antitrust Policy after Deregulation | 568 |
| | Lessons from Regulation and Deregulation | 582 |
| | Summary | 583 |
| | Questions and Problems | 584 |
| 18 | Economic Regulation of Energy: Crude Oil and Natural Gas | 585 |
| | The Theory of Price Ceilings | 587 |
| | Price and Quantity Regulation of the Crude Oil Industry | 591 |
| | Regulatory History | 594 |
| | Oil Prorationing | 596 |
| | Regulatory Practices | 596 |
| | Rationale for Prorationing | 597 |
| | Solutions to the Common Pool Problem | 602 |
| | Effects of Prorationing | 603 |
| | Mandatory Oil Import Program | 604 |
| | Regulatory Practices | 604 |
| | Effects of Regulation | 605 |
| | Crude Oil Price Controls | 607 |
| | Regulatory Practices | 607 |

| | | |
|------------|--|------------|
| | Effects of Price Regulation | 609 |
| | Price Regulation of the Natural Gas Industry | 616 |
| | Regulatory History | 618 |
| | Regulatory Practices | 619 |
| | Effects of Price Regulation | 621 |
| | Transition from Regulation to Markets in the Transmission of Natural Gas | 629 |
| | Summary | 631 |
| | Questions and Problems | 632 |
| III | HEALTH, SAFETY, AND ENVIRONMENTAL REGULATION | 635 |
| 19 | Introduction: The Emergence of Health, Safety, and Environmental Regulation | 637 |
| | Risk in Perspective | 638 |
| | Measuring Mortality Risks | 640 |
| | The Infeasibility of a No-Risk Society | 641 |
| | Wealth and Risk | 642 |
| | Irrationality and Biases in Risk Perception | 644 |
| | Policy Evaluation | 646 |
| | Regulatory Standards | 647 |
| | Benefit-Cost Analysis | 647 |
| | The Role of Heterogeneity | 648 |
| | Uncertainty and Conservatism | 650 |
| | The Role of Risk Ambiguity | 652 |
| | The Role of Political Factors | 654 |
| | Economic Models of Environmental Policies | 654 |
| | Voting Patterns | 656 |
| | Summary and Overview of Part III | 657 |
| | Questions and Problems | 659 |
| | Recommended Reading | 660 |
| 20 | Valuing Life and Other Nonmonetary Benefits | 661 |
| | Policy Evaluation Principles | 662 |
| | Willingness to Pay versus Other Approaches | 664 |
| | Variations in the Value of Life | 666 |
| | The Labor Market Model | 669 |
| | Empirical Estimates of the Value of Life | 673 |
| | Value of Life for Regulatory Policies | 675 |

| | |
|--|------------|
| Survey Approaches to Valuing Policy Effects | 678 |
| Valuation of Air Quality | 680 |
| Exploratory Nature of the Survey Approach | 681 |
| Sensitivity Analysis and Cost Effectiveness | 681 |
| Risk-Risk Analysis | 682 |
| Establishing Prices for Health, Safety, and Environmental Regulation | 683 |
| Questions and Problems | 684 |
| 21 Environmental Regulation | 687 |
| The Coase Theorem for Externalities | 688 |
| The Coase Theorem as a Bargaining Game | 689 |
| A Pollution Example | 690 |
| Long-Run Efficiency Concerns | 692 |
| Transactions Costs and Other Problems | 692 |
| Smoking Externalities | 693 |
| Special Features of Environmental Contexts | 696 |
| Selecting the Optimal Policy: Standards versus Fines | 697 |
| Setting the Pollution Tax | 698 |
| The Role of Heterogeneity | 700 |
| The Role of Uncertainty | 701 |
| Pollution Taxes | 703 |
| Cost Heterogeneity for Water Pollution Control | 704 |
| Current Market Trading Policies | 705 |
| The Future of Market Approaches | 708 |
| Global Warming and Irreversible Environmental Effects | 709 |
| Assessing the Merits of Global-Warming Policies | 709 |
| How Should We React to Uncertainty? | 711 |
| Multiperson Decisions and Group Externalities | 712 |
| The Prisoner's Dilemma | 712 |
| The <i>N</i> -Person Prisoner's Dilemma | 713 |
| Applications of the Prisoner's Dilemma | 714 |
| The Enforcement and Performance of Environmental Regulation | 715 |
| Enforcement Options and Consequences | 715 |
| Hazardous Wastes | 716 |
| Contingent Valuation for the <i>Exxon Valdez</i> Oil Spill | 719 |
| Evaluating Performance | 721 |
| Summary | 722 |

| | | |
|-----------|--|-----|
| | Questions and Problems | 723 |
| 22 | Product Safety | 725 |
| | Emergence of Product Safety Regulations | 725 |
| | Current Safety Decisions | 726 |
| | Changing Emphasis of Product Regulation | 728 |
| | Premanufacturing Screening: The Case of Pharmaceuticals | 729 |
| | Weighing the Significance of Side Effects | 730 |
| | Drug Approval Strategies | 730 |
| | The Behavioral Response to Product Safety Regulation | 734 |
| | Consumer's Potential for Muting Safety Device Benefits | 735 |
| | The Costs of Product Safety Regulation: The Automobile Industry Case | 739 |
| | Trends in Motor Vehicle and Home Accident Deaths | 744 |
| | Accident Rate Influences | 744 |
| | The Decline of Accident Rates | 745 |
| | The Rise of Product Liability | 747 |
| | The Negligence Standard | 748 |
| | The Strict Liability Standard | 749 |
| | Events-Study Evidence on Liability Costs | 749 |
| | Escalation of Damages | 750 |
| | Risk Information and Hazard Warnings | 753 |
| | Self-Certification of Safe Products | 754 |
| | Government Determination of Safety | 754 |
| | Alternatives to Direct Command and Control Regulation | 755 |
| | The Future of Product Safety Policy | 757 |
| | Questions and Problems | 758 |
| 3 | Regulation of Workplace Health and Safety | 761 |
| | The Potential for Inefficiencies | 763 |
| | How Markets Can Promote Safety | 763 |
| | Compensating Wage Differential Theory | 765 |
| | Risk Information | 767 |
| | On-the-Job Experience and Worker Quit Rates | 769 |
| | Inadequacies in the Market | 770 |
| | Informational Problems and Irrationalities | 770 |
| | Externalities | 771 |
| | OSHA's Regulatory Approach | 772 |

| | | |
|-----------|--|-----|
| | Setting OSHA Standard Levels | 772 |
| | The Nature of OSHA Standards | 775 |
| | The Reform of OSHA Standards | 777 |
| | Regulatory Reform Initiatives | 777 |
| | Changes in OSHA Standards | 777 |
| | OSHA's Enforcement Strategy | 780 |
| | Inspection Policies | 782 |
| | Trivial Violations | 783 |
| | OSHA Penalties | 783 |
| | Enforcement Targeting | 784 |
| | The Impact of OSHA Enforcement on Worker Safety | 785 |
| | OSHA Regulations in Different Situations | 787 |
| | OSHA and Other Factors Affecting Injuries | 788 |
| | The Role of Workers' Compensation | 794 |
| | Agenda for Policy Reform Efforts | 795 |
| | Questions and Problems | 797 |
| 24 | Patents and Pharmaceuticals | 799 |
| | Economics of Invention and Patents | 799 |
| | Background on Patents | 801 |
| | Incentives to Invent: Monopoly versus Competition | 802 |
| | Welfare Analysis of Patents | 806 |
| | Pharmaceuticals and the Role of Patents | 815 |
| | Industry Structure | 816 |
| | The 1984 Drug Price Competition and Patent Restoration Act | 825 |
| | Other Policies that Affect R&D Incentives | 828 |
| | Summary | 833 |
| | Questions and Problems | 833 |
| | Author Index | 837 |
| | Subject Index | 841 |