Contents

Preface to the Second Edition xxvi

1 Introduction

The Rationale for Regulation and Antitrust Policies 2
Antitrust Regulation 4
  The Changing Character of Antitrust Issues 4
  Reasoning behind Antitrust Regulations 5
Economic Regulation 5
  Development of Economic Regulation 6
  Factors in Setting Rate Regulations 6
Health, Safety, and Environmental Regulation 8
  Role of the Courts 9
Criteria for Assessment 10
Questions and Problems 11
Recommended Reading 11
Appendix 12

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 19
Nature of the Regulatory Oversight Process 23
  The Nixon and Ford Administrations 24
  The Carter Administration 25
  The Reagan Administration 27
  The Bush Administration 28
  The Clinton Administration 28
The Criteria Applied in the Oversight Process 29
  Regulatory Success Stories 29
  Promotion of Cost-Effective Regulation 30
  Distortion of Benefit and Cost Estimates 30
  The Regulatory Role of Price and Quality 32
The Impact of the Oversight Process 32
  The Cost of Regulation 33
  Other Measures of the Size of Regulation 33
  The Character of Regulatory Oversight Actions 36
What Do Regulators Maximize? 38
5 Oligopoly, Collusion, and Antitrust

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Theory</td>
<td>97</td>
</tr>
<tr>
<td>Example 1: Advertising Competition</td>
<td>97</td>
</tr>
<tr>
<td>Example 2: Compatibility of Standards</td>
<td>99</td>
</tr>
<tr>
<td>The Strategic Form of a Game</td>
<td>100</td>
</tr>
<tr>
<td>Nash Equilibrium</td>
<td>101</td>
</tr>
<tr>
<td>Oligopoly Theory</td>
<td>102</td>
</tr>
<tr>
<td>The Cournot Solution</td>
<td>102</td>
</tr>
<tr>
<td>Other Models of Oligopoly</td>
<td>108</td>
</tr>
<tr>
<td>Product Differentiation</td>
<td>109</td>
</tr>
<tr>
<td>Collusion</td>
<td>112</td>
</tr>
<tr>
<td>A Theory of Collusion</td>
<td>113</td>
</tr>
<tr>
<td>Cartel Problems</td>
<td>117</td>
</tr>
<tr>
<td>Collusion: Railroads in the 1880s</td>
<td>121</td>
</tr>
<tr>
<td>Antitrust Law toward Price Fixing</td>
<td>122</td>
</tr>
<tr>
<td>Economic Analysis of Legal Categories</td>
<td>123</td>
</tr>
<tr>
<td>Per Se Rule Cases</td>
<td>125</td>
</tr>
<tr>
<td>Conscious Parallelism</td>
<td>129</td>
</tr>
<tr>
<td>Summary</td>
<td>132</td>
</tr>
<tr>
<td>Questions and Problems</td>
<td>134</td>
</tr>
<tr>
<td>Notes</td>
<td>135</td>
</tr>
<tr>
<td>Appendix A</td>
<td>138</td>
</tr>
<tr>
<td>Game Theory: Formal Definitions</td>
<td>138</td>
</tr>
<tr>
<td>Appendix B</td>
<td>139</td>
</tr>
<tr>
<td>The Addyston Pipe Case</td>
<td>139</td>
</tr>
<tr>
<td>The Opinion of the Court</td>
<td>141</td>
</tr>
</tbody>
</table>

6 Market Structure and Strategic Competition

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Structure</td>
<td>145</td>
</tr>
<tr>
<td>Concentration</td>
<td>145</td>
</tr>
<tr>
<td>Scale Economies</td>
<td>152</td>
</tr>
<tr>
<td>Entry Conditions</td>
<td>155</td>
</tr>
<tr>
<td>Dominant Firm Theory</td>
<td>164</td>
</tr>
<tr>
<td>Static Analysis</td>
<td>164</td>
</tr>
<tr>
<td>Dynamic Analysis: Limit Pricing</td>
<td>166</td>
</tr>
<tr>
<td>Strategic Competition</td>
<td>171</td>
</tr>
<tr>
<td>Limit Pricing</td>
<td>171</td>
</tr>
<tr>
<td>Investment in Cost-Reducing Capital</td>
<td>179</td>
</tr>
<tr>
<td>Raising Rivals’ Costs</td>
<td>183</td>
</tr>
</tbody>
</table>
## Contents

Preemption and Brand Proliferation 184  
Summary 187  
Questions and Problems 188  
Notes 190

### 7 Mergers

Antitrust Laws and Merger Trends 195  
Reasons for Mergers 196  
Monopoly 199  
Economies 200  
Reducing Management Inefficiencies 200  
Other Motives 202  
Horizontal Mergers 203  
Benefits and Costs 203  
Cases 207  
1992 Merger Guidelines 212  
Conglomerate Mergers 215  
Potential Benefits 216  
Anticompetitive Effects and Cases 217  
Summary 220  
Questions and Problems 220  
Notes 222

### 8 Vertical Mergers and Restrictions

Vertical Mergers 225  
Benefits 225  
Anticompetitive Effects 229  
Extension of Monopoly: Fixed Proportions 235  
Extension of Monopoly: Variable Proportions 237  
Cases 239  
Vertical Restrictions 240  
Resale Price Maintenance 241  
Territorial Restraints 244  
Exclusive Dealing 246  
Tying 247  
Summary 260  
Questions and Problems 260  
Notes 262

### 9 Monopolization and Price Discrimination

The Possession of Monopoly Power 265
Contents

Intent to Monopolize 270
Cases 271
1890–1940: Standard Oil and United States Steel 271
1940–1970: Alcoa and United Shoe Machinery 275
1970 to Present: Kodak, Cereals, IBM, and Others 280
Predatory Pricing: Proposed Legal Definitions 283
The ATC Rule 285
The Output Restriction Rule 286
Joskow-Klevorick Two-Stage Rule 289
Price Discrimination and the Robinson-Patman Act 290
Systematic Discrimination 290
Unsystematic Discrimination 295
Cases 296
Summary 298
Questions and Problems 298
Notes 300

II ECONOMIC REGULATION 305

10 Introduction to Economic Regulation 307
What Is Economic Regulation? 307
Instruments of Regulation 308
Control of Price 308
Control of Quantity 309
Control of Entry and Exit 309
Control of Other Variables 310
Brief History of Economic Regulation 311
Formative Stages 311
Trends in Regulation 312
The Regulatory Process 317
Overview of the Regulatory Process 317
Regulatory Legislation 318
Independent Regulatory Commissions 319
Regulatory Procedures 321
The Theory of Regulation 322
Normative Analysis as a Positive Theory 323
Capture Theory 327
Economic Theory of Regulation 328
Taxicab Regulation 342
Summary and Overview of Part II 345
Questions and Problems 346
Notes 347

11 Theory of Natural Monopoly 351
The Natural Monopoly Problem 351
  Permanent and Temporary Natural Monopoly 351
  Subadditivity and Multiproduct Monopoly 353
Alternative Policy Solutions 358
  Ideal Pricing 358
  Franchise Bidding 370
  Actual Solutions 370
  Regulation 370
Public Enterprise 371
Summary 372
Questions and Problems 372
Notes 375

12 Natural Monopoly Regulation 377
The Rate Case 378
  Accounting Equation 378
  Regulatory Lag 379
The Rate Level 381
  Rate Base Valuation 381
  Cost of Equity Capital 383
  The Sliding Scale Plan 385
  Price Caps and Performance Standards 386
  Averch-Johnson Effect 387
Rate Structure 391
  FDC Pricing 392
  Undue Discrimination 394
Peak-Load Pricing 396
  Costs of Power Production 396
  Peak-Load Pricing Model 399
Regulation/Deregulation of Electric Power 403
  Effectiveness of Price Regulation 403
  Trend toward Competition 404
Summary 407
Questions and Problems 407
Notes 409
13 Franchise Bidding and Cable Television

Theory of Franchise Bidding  
Competition at the Bidding Stage  
Contractual Arrangements for the Postbidding Stage  
Assessment of Franchise Bidding  

Cable Television  
Historical/Regulatory Background  
Cable Television as a Natural Monopoly  
Franchising Process  
Assessment of Franchise Bidding  
Is Government Intervention Welfare-Improving?  

Summary  
Questions and Problems  
Notes  

14 Public Enterprise  

General Background  
Positive Theory of Public Enterprise  
Managerial Model of a Firm  
Managerial Model of a Private Enterprise  
Managerial Model of a Public Enterprise  
Comparison of Public and Private Enterprise  

Municipal Electric Utilities  
Pricing Behavior  
Allocative Efficiency Comparison  
Productive Efficiency Comparison  
Assessment of Private versus Public Utilities  

Airlines  

Summary  
Questions and Problems  
Notes  

15 Dynamic Issues in Natural Monopoly Regulation: Telecommunications

Transformation of a Natural Monopoly  
Basis for Natural Monopoly Regulation  
Sources of Natural Monopoly Transformation  
Regulatory Response  
Intercity Telecommunications Market  
Local-Exchange Telecommunications Market  


<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation of Regulated Monopolies and Competitive Markets</td>
<td>500</td>
</tr>
<tr>
<td>Benefits and Costs of Separation</td>
<td>501</td>
</tr>
<tr>
<td>Breakup of AT&amp;T</td>
<td>503</td>
</tr>
<tr>
<td>Telecommunications and Computers</td>
<td>505</td>
</tr>
<tr>
<td>The Future of the Telecommunications Industry: Digital Convergence</td>
<td>507</td>
</tr>
<tr>
<td>Industry Forces</td>
<td>508</td>
</tr>
<tr>
<td>Technology and Regulation</td>
<td>510</td>
</tr>
<tr>
<td>Policy Issues</td>
<td>511</td>
</tr>
<tr>
<td>Summary</td>
<td>513</td>
</tr>
<tr>
<td>Questions and Problems</td>
<td>514</td>
</tr>
<tr>
<td>Notes</td>
<td>515</td>
</tr>
<tr>
<td><strong>The Regulation of Potentially Competitive Markets: Theory and Estimation Methods</strong></td>
<td>519</td>
</tr>
<tr>
<td>Theory of Price and Entry/Exit Regulation</td>
<td>520</td>
</tr>
<tr>
<td>Direct Effects of Price and Entry/Exit Regulation:</td>
<td>520</td>
</tr>
<tr>
<td>The Competitive Model</td>
<td>525</td>
</tr>
<tr>
<td>Direct Effects of Price and Entry/Exit Regulation:</td>
<td>528</td>
</tr>
<tr>
<td>The Imperfectly Competitive Model</td>
<td>532</td>
</tr>
<tr>
<td>Some Indirect Effects of Price and Exit Regulation</td>
<td>533</td>
</tr>
<tr>
<td>Some Indirect Effects of Price and Exit Regulation</td>
<td></td>
</tr>
<tr>
<td>Regulation and Innovation</td>
<td></td>
</tr>
<tr>
<td>Methods for Estimating the Effects of Regulation</td>
<td>537</td>
</tr>
<tr>
<td>Overview of Estimation Methods</td>
<td>537</td>
</tr>
<tr>
<td>Intertemporal Approach</td>
<td>539</td>
</tr>
<tr>
<td>Application: New York Stock Exchange</td>
<td>540</td>
</tr>
<tr>
<td>Intermarket Approach</td>
<td>541</td>
</tr>
<tr>
<td>Application: Advertising of Eyeglasses</td>
<td>542</td>
</tr>
<tr>
<td>Counterfactual Approach</td>
<td>544</td>
</tr>
<tr>
<td>Application: State Usury Laws</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td>547</td>
</tr>
<tr>
<td>Questions and Problems</td>
<td>548</td>
</tr>
<tr>
<td>Notes</td>
<td>549</td>
</tr>
<tr>
<td><strong>Economic Regulation of Transportation: Surface Freight and Airlines</strong></td>
<td>551</td>
</tr>
<tr>
<td>Transportation Industry</td>
<td>551</td>
</tr>
<tr>
<td>Surface Freight Transportation</td>
<td>553</td>
</tr>
<tr>
<td>Regulatory History</td>
<td>553</td>
</tr>
</tbody>
</table>
18 Economic Regulation of Energy: Crude Oil and Natural Gas

The Theory of Price Ceilings

Price and Quantity Regulation of the Crude Oil Industry

Oil Prorationing

Mandatory Oil Import Program

Crude Oil Price Controls

Price Regulation of the Natural Gas Industry

Summary

Questions and Problems

Notes
Wealth and Risk 660
Irrationality and Biases in Risk Perception 661
Policy Evaluation 663
  Regulatory Standards 664
  Marginal Analysis 667
  The Role of Heterogeneity 668
  Discounting Deferred Effects 670
  Present Value 670
Uncertainty and Conservatism 672
  The Role of Risk Ambiguity 675
The Role of Political Factors 676
  Economic Models of Environmental Policies 676
  Voting Patterns 679
Summary and Overview of Part III 680
Questions and Problems 682
Recommended Reading 683
Notes 683

20 Valuing Life and Other Nonmonetary Benefits 685
  Policy Evaluation Principles 686
  Willingness-to-Pay versus Other Approaches 688
  Variations in the Value of Life 691
  The Labor Market Model 693
  Empirical Estimates of the Value of Life 697
  Value of Life for Regulatory Policies 699
Survey Approaches to Valuing Policy Effects 701
  Valuation of Air Quality 703
  Exploratory Nature of the Survey Approach 704
Sensitivity Analysis and Cost Effectiveness 704
Risk-Risk Analysis 705
Establishing Prices for Health, Safety, and Environmental Regulation 706
Questions and Problems 707
Notes 708

21 Environmental Regulation 711
  The Coase Theorem for Externalities 711
    The Coase Theorem as a Bargaining Game 713
    A Pollution Example 715
    Long-Run Efficiency Concerns 716
Transactions Costs and Other Problems 716
23 Regulation of Workplace Health and Safety 791
The Potential for Inefficiencies 793
How Markets Can Promote Safety 793
Compensating Wage Differential Theory 795
Risk Information 797
On-the-Job Experience and Worker Quit Rates 799
Inadequacies in the Market 800
Informational Problems and Irrationalities 800
Externalities 802
OSHA's Regulatory Approach 802
Setting OSHA Standard Levels 803
The Nature of OSHA Standards 805
The Reform of OSHA Standards 807
Regulatory Reform Initiatives 807
Changes in OSHA Standards 808
OSHA's Enforcement Strategy 811
Inspection Policies 812
Trivial Violations 813
OSHA Penalties 814
Enforcement Targeting 815
The Impact of OSHA Enforcement on Worker Safety 816
OSHA Regulations in Different Situations 818
OSHA and Other Factors Affecting Injuries 819
Agenda for Policy Reform Efforts 825
Questions and Problems 826
Notes 827
## Patents and Pharmaceuticals

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics of Invention and Patents</td>
<td>831</td>
</tr>
<tr>
<td>Background on Patents</td>
<td>833</td>
</tr>
<tr>
<td>Incentives to Invent: Monopoly versus Competition</td>
<td>834</td>
</tr>
<tr>
<td>Welfare Analysis of Patents</td>
<td>837</td>
</tr>
<tr>
<td>Pharmaceuticals and the Role of Patents</td>
<td>847</td>
</tr>
<tr>
<td>Industry Structure</td>
<td>847</td>
</tr>
<tr>
<td>The 1984 Drug Price Competition and Patent Restoration Act</td>
<td>855</td>
</tr>
<tr>
<td>Other Policies That Affect R&amp;D Incentives</td>
<td>858</td>
</tr>
<tr>
<td>Summary</td>
<td>863</td>
</tr>
<tr>
<td>Questions and Problems</td>
<td>864</td>
</tr>
<tr>
<td>Notes</td>
<td>865</td>
</tr>
<tr>
<td>Name Index</td>
<td>871</td>
</tr>
<tr>
<td>Subject Index</td>
<td>877</td>
</tr>
</tbody>
</table>