

Contents

List of Figures xiii

Preface xvii

1 Introduction 1

- 1.1 The Study of Industrial Organization 1
- 1.2 Law and Economics 5
- 1.3 Industrial Organization and International Trade 7
- 1.4 References 7

I Theoretical Background 9

2 Basic Concepts in Noncooperative Game Theory 11

- 2.1 Normal Form Games 12
- 2.2 Extensive Form Games 22
- 2.3 Repeated Games 28
- 2.4 Appendix: Games with Mixed Actions 33
- 2.5 Appendix: Games with Imperfect Information 37
- 2.6 Exercises 40
- 2.7 References 42

3 Technology, Production Cost, and Demand 43

- 3.1 Technology and Cost 43
- 3.2 The Demand Function 49
- 3.3 Appendix: Consumer Surplus: Quasi-Linear Utility 53
- 3.4 Exercises 54

- II Market Structures and Organization 57**
- 4 Perfect Competition 63**
 - 4.1 Non-Increasing Returns to Scale 64
 - 4.2 Increasing Returns to Scale 66
 - 4.3 Marginal-Cost Pricing and Social Welfare 68
 - 4.4 Exercises 69
 - 4.5 References 70
- 5 The Monopoly 71**
 - 5.1 The Monopoly's Profit-Maximization Problem 72
 - 5.2 Monopoly and Social Welfare 73
 - 5.3 Discriminating Monopoly 75
 - 5.4 The Cartel and the Multiplant Monopoly 78
 - 5.5 Durable-Goods Monopolies 80
 - 5.6 Appendix: The Legal Approach 89
 - 5.7 Exercises 92
 - 5.8 References 94
- 6 Markets for Homogeneous Products 97**
 - 6.1 Cournot Market Structure 98
 - 6.2 Sequential Moves 104
 - 6.3 Bertrand Market Structure 107
 - 6.4 Cournot versus Bertrand 112
 - 6.5 Self-Enforcing Collusion 115
 - 6.6 International Trade in Homogeneous Products 120
 - 6.7 Appendix: Cournot with Heterogeneous Firms 126
 - 6.8 Exercises 128
 - 6.9 References 131
- 7 Markets for Differentiated Products 133**
 - 7.1 Two Differentiated Products 135
 - 7.2 Monopolistic Competition in Differentiated Products 143
 - 7.3 "Location" Models 149
 - 7.4 Appendix: Inverting Demand Systems 162
 - 7.5 Appendix: Equilibrium in the Linear City 163
 - 7.6 Exercises 164
 - 7.7 References 166

8 Concentration, Mergers, and Entry Barriers 169

- 8.1 Concentration Measures 171
- 8.2 Mergers 173
- 8.3 Entry Barriers 182
- 8.4 Entry Deterrence 186
- 8.5 Contestable Markets 206
- 8.6 Appendix: Merger and Antitrust Law 209
- 8.7 Appendix: Entry Deterrence and Antitrust Law 212
- 8.8 Exercises 213
- 8.9 References 214

III Technology and Market Structure 219**9 Research and Development 221**

- 9.1 Classifications of Process Innovation 222
- 9.2 Innovation Race 224
- 9.3 Cooperation in R&D 229
- 9.4 Patents 233
- 9.5 Licensing an Innovation 239
- 9.6 Governments and International R&D Races 241
- 9.7 Appendix: Patent Law 244
- 9.8 Appendix: Legal Approach to R&D Joint Ventures 247
- 9.9 Mathematical Appendix 248
- 9.10 Exercises 248
- 9.11 References 250

10 The Economics of Compatibility and Standards 253

- 10.1 The Network Externalities Approach 256
- 10.2 The Supporting Services Approach 263
- 10.3 The Components Approach 269
- 10.4 Exercises 276
- 10.5 References 276

IV Marketing 279

11 Advertising 281

- 11.1 Persuasive Advertising 283
- 11.2 Informative Advertising 287
- 11.3 Targeted Advertising 290
- 11.4 Comparison Advertising 294
- 11.5 Other Issues Concerning Advertising 297
- 11.6 Appendix: Advertising Regulations 300
- 11.7 Exercises 302
- 11.8 References 304

12 Quality, Durability, and Warranties 307

- 12.1 Personal Income and Quality Purchase 308
- 12.2 Quality as Vertical Product Differentiation 310
- 12.3 Market Structure, Quality, and Durability 315
- 12.4 The Innovation-Durability Tradeoff 317
- 12.5 The Market for Lemons 322
- 12.6 Quality-Signaling Games 327
- 12.7 Warranties 330
- 12.8 Appendix: The Legal Approach to Products Liability 335
- 12.9 Exercises 337
- 12.10 References 338

13 Pricing Tactics: Two-Part Tariff and Peak-Load Pricing 341

- 13.1 Two-Part Tariff 342
- 13.2 Nonuniform Pricing 346
- 13.3 Peak-Load Pricing 348
- 13.4 Can Firms "Control" the Seasons? 352
- 13.5 Exercises 358
- 13.6 References 358

14 Marketing Tactics: Bundling, Upgrading, and Dealerships 361

- 14.1 Bundling and Tying 362
- 14.2 Killing Off Markets for Used Textbooks 376
- 14.3 Dealerships 380
- 14.4 Appendix: The Legal Approach to Tying 388
- 14.5 Appendix: Legal Approach to Vertical Restraints 389
- 14.6 Exercises 390
- 14.7 References 392

V	The Role of Information	393
15	Management, Compensation, and Regulation	395
15.1	The Principal-Agent Problem	396
15.2	Production with Teams	404
15.3	Competition and Managerial Compensation	407
15.4	Why Executives Are Paid More than Workers	413
15.5	Regulating a Firm under Unknown Cost	416
15.6	Exercises	419
15.7	References	420
16	Price Dispersion and Search Theory	421
16.1	Price Dispersion	421
16.2	Search Theory	426
16.3	Mathematical Appendix	432
16.4	Exercises	432
16.5	References	433
VI	Selected Industries	435
17	Miscellaneous Industries	437
17.1	Restaurant Economics	438
17.2	The Airline Industry	440
17.3	The Fishing Industry	448
17.4	Public Roads and Congestion	452
17.5	Exercises	456
17.6	References	457
	Index	459