

Contents

About the Authors	xiii
Preface	xv
Part I Microeconomic Foundations	1
1 Industrial Organization and Imperfect Competition: What, How, and Why	3
1.1 What Is Industrial Organization?	3
1.2 How We Analyze Imperfect Competition	4
1.3 Why: Antitrust Policy and Industrial Organization Theory	6
1.3.1 The “New” Sherman Act and the Dominance of Structure-Based Analysis	9
1.3.2 The Tide Changes: The Chicago School and Beyond	11
Summary	14
Problems	14
References	15
Appendix—Excerpts from Key Antitrust Statutes	15
2 Basic Microeconomics	23
2.1 Competition versus Monopoly: The Poles of Market Performance	23
2.2 Intertemporal Considerations and Constraints on Monopoly Power	28
2.2.1 Time and the Evolution of Industry Structure	31
2.2.2 Durable Goods and the Coase Conjecture	33
2.2.3 The Nonsurplus Approach to Economic Efficiency	35
Summary	36
Problems	37
References	37
3 Technology and Cost Relationships	38
3.1 Production Technology and Cost Functions for Single-Product Firms	38
3.1.1 Cost Variables and Output Decisions	42
3.1.2 Scale Economies, Sunk Costs, and Market Structure	43
3.2 Cost Relations for Multiproduct Firms	48
3.2.1 Scope and Scale Economies for Multiproduct Firms	48
3.2.2 Different Versions of the Same Core Product	53
3.3 Non-Cost Determinants of Market Structure	55
3.4 Empirical Application: Cost Function Estimation, Scale and Scope Economies	56

Summary	62
Problems	62
References	63
4 Market Structure and Market Power	65
4.1 Measuring Market Structure	66
4.1.1 Measurement Problems: What Is a Market?	68
4.1.2 The Endogeneity of Market Structure	71
4.2 Measuring Market Power—the Lerner Index Again	72
4.3 Empirical Application: Monopoly Power: How Bad Is It?	76
Summary	79
Problems	80
References	81
Part II Price and Nonprice Tactics for Firms with Market Power	83
5 Price Discrimination and Monopoly	85
5.1 The Feasibility of Price Discrimination	86
5.2 First-Degree Price Discrimination	87
5.2.1 Personalized Pricing	88
5.2.2 Two-Part Pricing	90
5.2.3 Block Pricing	92
5.3 Price Discrimination with Less Information	94
5.3.1 Group Pricing or Third-Degree Discrimination	94
5.3.2 Third-Degree Price Discrimination and Social Welfare	97
5.3.3 Group Pricing: An Application with Linear Demand	99
5.3.4 A Caveat on Welfare and Third-Degree Price Discrimination	100
5.4 Second-Degree Price Discrimination: Menu Pricing	101
5.4.1 A Two-Part Tariff	103
5.4.2 Menu Pricing	105
5.4.3 Menu Pricing and Social Welfare	108
Summary	110
Problems	111
References	112
6 Price Discrimination, Product Variety, Bundling, and Tying	113
6.1 Price Discrimination and Product Quality	114
6.1.1 A (Relatively) Simple Example	114
6.1.2 An Extension: Endogenous Quality	118
6.1.3 A Further Extension: Damaged Goods	121
6.2 Price Discrimination and Product Variety	123
6.3 Bundling and Tying	128
6.3.1 Bundling	128
6.3.2 Required Tie-In Sales	133
6.3.3 Bundling/Tying, Policy, and Competition	135
6.4 Empirical Application: Price Discrimination, Product Variety, and Monopoly versus Competition	137

Summary	140
Problems	141
References	142
Part III Oligopoly and Strategic Interaction	143
7 Static Games and Quantity versus Price Competition	145
7.1 A Brief Introduction to Game Theory	145
7.2 Dominant and Dominated Strategies	147
7.3 The Static Cournot Model	150
7.3.1 Cournot Variation 1: Many Firms	153
7.3.2 Cournot Variation 2: Many Firms and Different Costs	154
7.4 The Bertrand Model	156
7.4.1 Bertrand Competition—Capacity Constraints	157
7.4.2 Bertrand Competition—Product Differentiation	160
7.5 Strategic Substitutes and Complements	162
7.6 Empirical Application: Brand Competition and Consumer Preferences—Evidence from the California Retail Gasoline Market	164
Summary	167
Problems	168
References	169
8 Dynamic Games and First and Second Movers	171
8.1 The Stackelberg Model of Quantity Competition	172
8.2 Sequential Price Competition	175
8.3 Sequential Quality Choice	178
8.4 Commitment and Credibility in Dynamic Games	180
8.5 The Chain-Store Paradox	184
Summary	186
Problems	186
References	187
9 Entry Deterrence and Predation	189
9.1 Market Structure over Time: Random Processes & Stylized Facts	190
9.2 Deterring Entry	193
9.2.1 Limit Output and Limit Price Models	193
9.2.2 Capacity Expansion as a Credible Entry-Deterring Commitment	195
9.2.3 Evidence on Predatory Capacity Expansion	203
9.3 Predation and Asymmetric Information	205
9.3.1 Asymmetric Information and Limit Pricing	206
9.3.2 Predation, Asymmetric Information, and Financial Constraints	211
9.4 Long-Term Contracts as a Barrier to Entry	219
9.4.1 Long-Term Contracts, Penalty Fees, and Entry Deterrence	219
9.4.2 Naked Exclusion	221
9.5 Predatory Conduct and Public Policy	223

9.6 Empirical Application: Entry Deterrence in the Pharmaceutical Industry	225
Summary	229
Problems	230
References	231
10 Price Fixing and Repeated Games	234
10.1 The Cartel's Dilemma	237
10.2 Repeated Games	241
10.2.1 Finitely Repeated Games	242
10.2.2 Infinitely or Indefinitely Repeated Games	245
10.2.3 Some Extensions	248
10.3 Empirical Application 1: Estimating the Effects of Price-Fixing	250
10.4 Cartels in Practice: Facilitating Factors and Practices	254
10.4.1 Factors that Facilitate Collusion	254
10.4.2 Facilitating Practices	261
10.5 Antitrust Policy toward Cartels: Deterrence and Detection	264
10.5.1 Antitrust Policy: Investigation versus Fines	264
10.5.2 Antitrust Policy: Detecting Cartels	266
10.5.3 Antitrust Policy: Leniency/Amnesty Programs	269
10.6 Empirical Application: An Experimental Investigation of Leniency Programs	275
Summary	278
Problems	279
References	281
Part IV Contractual Relationships between Firms	283
11 Horizontal Mergers	285
11.1 Horizontal Mergers and the Merger Paradox	287
11.2 Mergers and Cost Synergies	291
11.2.1 Fixed-Cost Savings	291
11.2.2 Variable Cost Savings	292
11.3 Merged Firms as Stackelberg Leaders	293
11.4 Sequential Mergers	298
11.5 Horizontal Mergers and Product Differentiation	301
11.5.1 Bertrand Competition with Linear Demand	301
11.5.2 Mergers in a Spatial Market	304
11.6 Public Policy and Horizontal Mergers	313
11.6.1 Coordinated Effects of Mergers	315
11.6.2 Consumer versus Producer versus Total Surplus	316
11.7 Application: Evaluating the Impact of Mergers with Computer Simulation	318
Summary	320
Problems	321
References	322

12	Vertical and Conglomerate Mergers	324
12.1	Procompetitive Vertical Mergers	325
12.2	Vertical Mergers, Price Discrimination, and Competition	328
12.3	Vertical Mergers, Oligopoly, and Foreclosure	332
12.3.1	Vertical Integration and Foreclosure in a Cournot Model	334
12.3.2	Vertical Mergers in a Differentiated Products Setting	338
12.4	A Reappraisal: The GE-Honeywell Merger Once More	343
12.5	A Note on Conglomerate Mergers	344
12.6	Empirical Application: Vertical Integration in the Ready-Mixed Concrete Industry	346
	Summary	348
	Problems	349
	References	350
13	Vertical Restraints	351
13.1	Vertical Price Restraints and Antitrust Policy: A Brief History	351
13.2	Vertical Price Restraints and Suppressed Competition	354
13.3	Arguments in Support of Vertical Price Restraints	355
13.3.1	Vertical Price Restraints as a Response to Double-Marginalization	355
13.3.2	RPM Agreements and Retail Competition with Price Discrimination	358
13.3.3	RPM Agreements to Ensure the Provision of Retail Services	360
13.4	Retail Price Maintenance and Uncertain Demand	368
13.5	Nonprice Vertical Restraints	371
13.5.1	Exclusivity to Limit Free Riding	372
13.5.2	Exclusivity and the Suppression of Competition	373
13.6	Aftermarkets	376
13.7	Empirical Application: Exclusive Dealing in the U.S. Beer Industry	380
	Summary	384
	Problems	385
	References	386

Part V Topics in Nonprice Competition: Advertising and Research and Development 389

14	Advertising, Market Power, and Information	391
14.1	Advertising and Monopoly Power: The Dorfman-Steiner Condition	392
14.2	Advertising as Consumer Information	394
14.2.1	Advertising and Quality Signaling	395
14.2.2	Suppressed Information Advertising Content	400
14.3	Advertising, Information, and Competition	402
14.3.1	Advertising, Information, and Competition in a Product-Differentiated Market	403
14.3.2	Advertising and Wasteful Competition	407
14.4	Complements, Advertising, and Brand Names	408

14.4.1	Advertising and Building Brand Value	410
14.4.2	Advertising and Extending the Reach	411
14.4.3	The Nature of Advertising, Product Prices, and Welfare	412
14.5	Empirical Application: Advertising, Information, and Prestige	414
	Summary	419
	Problems	419
	References	420
15	Research and Development	422
15.1	A Taxonomy of Innovations	424
15.2	Market Structure and the Incentive to Innovate	426
15.2.1	Competition and the Replacement Effect	426
15.2.2	Persistence of Monopoly and the Efficiency Effect	429
15.2.3	A Possible Synthesis	430
15.3	A More Complete Model of Competition and Innovation	436
15.4	Evidence on the Schumpeterian Hypothesis	438
15.5	Product and Process Innovation: Cournot versus Bertrand	439
15.5.1	Product R&D	441
15.5.2	Process R&D	442
15.5.3	Product and Process R&D	443
15.6	R&D Cooperation between Firms	443
15.6.1	Noncooperative R&D	445
15.6.2	Technology Cooperation	447
15.7	Empirical Application: R&D Spillovers in Practice	451
	Summary	454
	Problems	455
	References	456
16	Patents and Patent Policy	458
16.1	Optimal Patent Length	460
16.2	Optimal Patent Breadth	463
16.2.1	Gilbert and Shapiro	463
16.2.2	Klemperer	466
16.2.3	Some Conclusions	472
16.3	Patent Races	473
16.4	Monopoly Power and “Sleeping Patents”	477
16.5	Patent Licensing	479
16.5.1	The Incentive to License a Nondrastic Innovation	479
16.5.2	Licensing, Drastic Innovations, and Monopoly Power	483
16.5.3	Patent Licensing, Social Welfare, and Public Policy	484
16.6	Recent Patent Policy Developments	486
16.7	Empirical Application: Patent Law and Patent Practice in the Semiconductor Industry	489
	Summary	491
	Problems	492
	References	493

Part VI Special Topics: Networks and Strategic Trade Policy	495
17 Network Markets	497
17.1 Market Provision of a Network Service	497
17.1.1 Monopoly Provision	498
17.1.2 Competitive and Optimal Provision of a Network Service	500
17.2 Networks, Competition, and Complementary Services	501
17.2.1 Price Competition with Network Effects	502
17.2.2 Network Competition and Complementary Services	503
17.3 Systems Competition and the Battle over Industry Standards	506
17.3.1 A Simple Model of Compatibility and Competition	507
17.3.2 Compatibility, Standards, and Competition	509
17.4 Application: Network Externalities in Computer Software—Spreadsheets	513
Summary	517
Problems	517
References	518
18 Strategic Commitments: Confronting Potential Entrants and International Rivalry	520
18.1 The Strategic Value of Commitment	521
18.2 Strategic Complements and Substitutes: Cats, Dogs, and the Lean and Hungry Look	522
18.2.1 Strategic Complements and Competition: Fat Cats and Puppy Dogs	523
18.2.2 Strategic Substitutes and Competition: Top Dogs and the Lean and Hungry Look	526
18.2.3 Commitments and Strategies	528
18.3 Strategic Commitments in International Markets	529
18.3.1 Strategic Subsidies in an International Cournot Model	531
18.3.2 Strategic Tariffs and Scale/Scope Economies	532
18.3.3 Strategic R&D Subsidies	534
18.4 Trade Agreements as Commitment Devices	535
Summary	537
Problems	538
References	539
Answers to Selected Problems	541
Index	551