Contents

Preface xv

1 Background 1

1.1 Subject matter 1

1.2 Markets and market structure 3

1.2.1 Industry classification schemes 5

1.2.2 Measures of supply-side market structure 6

1.3 Perfect competition and monopoly 10

1.3.1 Perfect competition 10

1.3.2 Monopoly 17

1.4 EC competition policy 20

Study points 21

Problems 22

2 Oligopoly markets: noncooperative behaviour 23

2.1 Introduction 23

2.2 Cournot oligopoly 23

2.2.1 The basic model 23

2.2.2 Best response functions 24

2.2.3 Cournot equilibrium 26

2.2.4 Taxes 29

2.2.5 Cost differences 32

2.2.6 Conjectural variations 34

2.2.7 Product differentiation 37

2.2.8 Consumer switching costs 37

2.2.9 Sales maximization 40

2.2.10 Many firms 41

2.3 Bertrand duopoly 43

2.3.1 Standardized product 43

2.3.2 Differentiated products 45

2.4 Summary 47

Study points 47

Problems 48

3 Collusion and tacit collusion 49

3.1 Introduction 49

3.2 Noncooperative collusion 50

3.2.1 Trigger strategy 50

3.2.2 Basing point pricing 53
3.2.3 Publicity 55
3.3 Welfare consequences of collusion 57
3.4 Article 81 59
3.4.1 Provisions 59
3.4.2 Applications 59
3.5 Enforcement 65
3.5.1 Leniency 65
3.5.2 Cooperation 65
3.5.3 Direct applicability 65
3.6 Market definition for the application of competition policy 67
3.7 Summary 68
Study points 69
Problems 69

4 Dominance **70**
4.1 Introduction 70
4.2 Quantity leadership 70
4.3 Limit pricing 73
4.3.1 Entry deterrence with output commitment 73
4.3.2 Entry deterrence with imperfectly informed entrants 76
4.4 Predation and the chain store paradox 79
4.5 Article 82 82
4.5.1 Price discrimination 83
4.5.2 Loyalty rebates 85
4.5.3 Public monopolies 86
4.6 Summary 87
Study points 87
Problems 88

5 Innovation **89**
5.1 Introduction 89
5.2 Innovation in a market system 90
5.2.1 Spillovers 90
5.2.2 Uncertainty 91
5.3 The rates of return to R&D 91
5.4 Market structure and innovation 93
5.4.1 Schumpeter 93
5.4.2 Arrow 94
5.5 Appropriability and absorptive capacity 96

5.6 Promoting R&D 98
5.6.1 R&D cooperation in practice 98
5.6.2 R&D cooperation in theory 100
5.7 Innovation and EU competition policy 101
5.7.1 Cooperative R&D under Article 81 101
5.7.2 Intellectual property rights and Article 82 102
5.8 Summary 104
Study points 105

6 Organization 106
6.1 Introduction 106
6.2 Market structure 107
6.2.1 Cournot oligopoly, single-plant firms 107
6.2.2 Conjectural variations, single-plant firms 111
6.2.3 Cournot oligopoly, multiplant firms 111
6.3 Entry and exit 113
6.4 Seller concentration and the size distribution of firms 115
6.4.1 Gibrat's Law 115
6.4.2 Seller concentration and endogenous sunk costs 117
6.5 Network externalities 119
6.5.1 Market structure and market performance with network externalities 121
6.5.2 Path dependence 121
6.6 Firms and firm structure 122
6.6.1 Coase 123
6.6.2 Transaction costs 124
6.6.3 Property rights 125
6.6.4 Chandler 125
6.6.5 Reprise 128
6.7 Merger policy 128
6.7.1 Merger control regulation 129
6.7.2 Joint ventures and joint dominance 132
6.8 Cooperation 133
6.9 Summary 136
Study points 136
Problems 137

7 Imperfect competition and international trade: I 140
7.1 Introduction 140
7.2 Interindustry trade 142
7.2.1 Comparative advantage 142
7.2.2 Factor mobility and immobility 143

7.2.3 Factor endowments and the Leontief paradox 144
7.3 Intraindustry trade 148
7.3.1 Quantity-setting firms 148
7.3.2 Price-setting firms 153
7.4 Trade and domestic market performance 156
7.5 Summary 157
Study points 157
Problems 157

8 Imperfect competition and international trade: II 159
8.1 Trade policy 159
8.1.1 Strategic trade policy 159
8.1.2 Tariffs and quotas 166
8.1.3 Import barriers and export-promotion 168
8.2 Exchange rate passthrough 169
8.3 Trade and market structure 173
8.3.1 Mode of supply to a foreign market 174
8.3.2 Mutual forbearance 176
8.3.3 Exporting 176
8.3.4 Licensing/joint venture 177
8.3.5 Direct foreign investment 177
8.3.6 Exports v. DFL: substitutes or complements? 179
8.3.7 Hysteresis 180
8.4 Summary 181
Study points 181
Problems 181

9 Trade policy and competition policy 185
9.1 Introduction 185
9.2 Export cartels 185
9.2.1 Theory 186
9.2.2 Practice 189
9.3 Voluntary export restraints 194
9.3.1 Quality upgrading 196
9.3.2 Trade diversion 196
9.3.3 Welfare consequences 197
9.3.4 VERs and the WTO Agreements 197
9.4 Dumping 198
9.4.1 Dumping as price discrimination: reciprocal dumping 199
9.4.2 Dumping as predation 202
9.4.3 Antidumping policy: theory 202
9.4.4 EC antidumping policy: application 204

9.5 What is to be done? 207

Study points 208
Problems 209

10 Market integration in the European Union 211

10.1 Introduction 211

10.2 Market integration in theory 212
10.2.1 Market integration and market performance 212
10.2.2 Imperfect competition 214
10.2.3 Market integration and market structure 217

10.3 Market integration in practice 219
10.3.1 Prologue: the ECSC 219
10.3.2 Market integration: empirical evidence 222

10.4 State aid and state aid policy 226
10.4.1 The extent of state aid 226
10.4.2 Economic analysis of state aid 229
10.4.3 The application of state aid policy 232

10.5 Summary 234

Study points 234
Problems 234

References 236

Index of Commission Decisions 247
Index of Court Decisions 247
Index of Names 248
Index of Subjects 251

List of Figures

1.1	Topics in industrial organization	2
1.2	Linear market demand curve	11
1.3	Consumers' surplus	13
1.4	Firm cost curves	15
1.5	Market equilibrium and number of firms, perfectly competitive market	16
1.6	Monopolist's output decision	18
2.1	Firm 1's output decision	25
2.2	Best response curves, Cournot duopoly	27
2.3	Market equilibrium, Cournot duopoly	28
2.4	Taxes and Cournot duopoly best response curves	30
2.5	Market equilibrium, Cournot duopoly, per unit tax	31
2.6	Best response curves	32
2.7	Market power and welfare losses with efficiency differentials	34
2.8	Firm 1's best response curve, alternative conjectures	35
2.9	Cournot equilibrium, alternative conjectural variations	36
2.10	Cournot best response curves with product differentiation	38
2.11	Consumer switching costs and Cournot best response curves	39
2.12	Cournot best response curves, partial sales maximization by firm	41
2.13	Sales maximization and equilibrium firm profit	42
2.14	Firm 1's price decision	44
2.15	Price best response curves, Bertrand duopoly with product differentiation	46
3.1	Private profit maximization with a duopoly collusive agreement	52
3.2	Multiple basing point pricing	54
4.1	Stackelberg leader's residual demand curve	72
4.2	Incumbent's value at limit output	76
4.3	Game tree and payoff matrix for one stage of the chain store game	80
4.4	Possible game trees for one stage of the Kreps and Wilson game	82
5.1	Profit to be gained by innovation under monopoly	95
5.2	Profit to be gained by innovation under perfect competition	96
6.1	Average cost, alternative levels of fixed cost	108
6.2	Equilibrium number of firms—fixed cost relationship	110
6.3	Average cost, multiplant firm, plant cost function	112
6.4	Market shares, EU new car and light truck sales, 1997	116
6.5	Cumulative market shares, EU new car and light truck sales, 1997	117
6.6	Functional (Unitary or U-) form firm	126

6.7	Multidivisional (M-) form firm	126
7.1	Circular flow diagram	146
7.2	Trilateral trade flows, motor vehicle and aircraft industries, EC, Japan, and US, 1997	149
7.3	Cournot duopoly trade model with intraindustry trade	151
7.4	Cournot duopoly trade model, unit transportation cost	152
7.5	Price best response curves, Bertrand duopoly trade model	154
8.1	Export subsidy and market equilibrium, Cournot duopoly trade model	161
8.2	Duelling subsidies, Cournot duopoly trade model	162
8.3	Export subsidy and market equilibrium, Bertrand duopoly trade model	164
8.4	Import quota and Cournot duopoly equilibrium, interindustry trade	167
8.5	Country 1 quota and Cournot duopoly equilibrium with economies of scale	168
8.6	Total imports of 75 countries, January 1929 to March 1933	171
8.7	Exchange rate fluctuations and Cournot duopoly equilibrium	171
8.8	Domestic v. multinational operation	175
8.9	Cournot duopoly equilibrium, country 2, export v. direct foreign investment	178
9.1	Export cartel and Cournot triopoly reaction functions, export market	187
9.2	Firm 2's price and sales decision, market 1	201
10.1	Two countries, identical markets in each country, perfect competition, identical production costs, no taxes or distribution costs	212
10.2	Two countries, identical markets in each country, perfect competition, identical production costs, no export costs, different tax rates	213
10.3	Average monthly telecommunications expenditures for a standard basket of calls, residential users, v. number of authorized operators	226

List of Tables

1.1	NACE Industry 15.5	4
1.2	1997 new car and light truck sales (1000s) and regional shares	7
1.3	Seller concentration measures examples	8
1.4	Concentration statistics for selected NACE industries, EC, 1994	9
5.1	Social and private rates of return from investment in innovations	92
6.1	Descriptive statistics on entry and exit, 183 German manufacturing industries, 1983–5	114
6.2	EEC market share estimates, turbo-prop commuter aircraft	131
7.1	David Ricardo's interindustry trade example	142
7.2	Share of manufacturing exports in UK exports during the Industrial Revolution	144
7.3	Domestic capital and labour requirements of a representative million dollar bundle of US exports and of competitive import replacements (1947)	145
IO-1	3-sector input-output table	146
IO-2	Input-output coefficients, 3-sector economy	147
8.1	Payoff matrix, government export-subsidy games, quantity-setting firms	161
8.2	Pluses and minuses of alternative strategies vis-à-vis international markets	176
9.1	Japanese tariffs on imported cars	194
9.2	Restrictions on Japanese imports, by country, 1992	195
10.1	Big Mac prices (including sales tax), selected regions	223
10.2	State aid to manufacturing in the Community, 1994–8, annual values, million 1997 euros	229
10.3	State aid to manufacturing by type, 1996–8, EUR 15	229
10.4	Average annual EU state aid, 1996–8, million euros	230