

Contents

Part I The Airline Industry in Perspective

1	Introduction	3
1.1	The ‘Old Industry’	3
1.2	The ‘New Industry’	5
1.3	The Objective of this Study	8
2	Characteristics of the Airline Industry	13
2.1	Introduction	13
2.2	Market Deregulation	14
2.3	The Open-Skies Agreement between the EU and the US	16
2.4	Airline Business Models	17
2.4.1	Full-Service Carriers	18
2.4.2	Low-Cost Carriers	19
2.4.3	Charter Carriers	21
2.5	Competition between Business Models	22
2.5.1	FSC Aiming for Higher Cost-Efficiency	25
2.5.2	The Rise in Fuel Prices	27
2.6	Airline Network	29
2.6.1	Network Economics	29
2.6.2	Network Management	30
2.6.3	Network Definitions	31
2.7	Pricing and ‘Yield’ Management	33
2.7.1	The FSC Yield Management	33
2.7.2	The LCC Yield Management	36
2.8	Airline Alliances	38
2.9	Mergers and Acquisitions; Three Mega-Carriers in Europe?	41
2.10	Conclusions	42

Part II Coping with Crises in the Airline Industry

3 Short- and Long-Term Reaction to Exogenous Demand	
Shifts	47
3.1 Introduction	47
3.2 Exogenous Demand Shifts: The American and Asian Crises	49
3.2.1 The September 11 Terrorist Attack.....	50
3.2.2 The SARS Epidemic	52
3.3 Theoretical Model	54
3.4 Results	60
3.5 Conclusions	61
4 The Airlines Conduct during the Crises of 2001/2003	63
4.1 Introduction	63
4.2 Econometric Analysis	63
4.2.1 The Database	64
4.2.2 Empirical Model.....	65
4.3 Results	69
4.4 Conclusions	73

Part III The Rise of Low-Cost Carriers

5 Effects of LCC Entry on Pricing in Aviation	77
5.1 Introduction	77
5.2 Pricing Models for Different Market Structure	78
5.2.1 Yield Management	78
5.2.2 Theoretical Framework	79
5.2.3 Monopoly	82
5.2.4 Symmetric Duopoly	82
5.2.5 Asymmetric Duopoly	83
5.2.6 Extension and General Outcomes.....	85
5.3 Evidence on Price Setting in Europe	87
5.3.1 The Database	87
5.3.2 Results	90
5.4 Conclusions	94
6 Network Competition: The Coexistence of Hub-and-Spoke and Point-to-Point Systems	95
6.1 Introduction	95
6.2 The Theoretical Model	96
6.2.1 The Pricing Rule.....	98
6.2.2 The Equilibrium of the Game	100
6.2.3 Alternative Pricing Rules.....	102
6.3 Conclusions	104

7 New Measures to Compare Network Configurations of Full-Service and Low-Cost Carriers	107
7.1 Introduction	107
7.2 Network Measures	108
7.2.1 The Gini Concentration Index	110
7.2.2 The Freeman Network Centrality Index	111
7.2.3 The Freeman Index versus the Gini Index	115
7.2.4 The Bonacich ‘Global’ and ‘Local’ Centrality	115
7.2.5 Temporal Concentration of HS versus PP	120
7.3 Network Organization	124
7.4 Network Connectivity Models: A New Outlook	126
7.5 Conclusions	127
 Part IV Conclusions	
8 Retrospect and Prospect	131
8.1 The Objective and Research Questions	131
8.2 Summary and Conclusions	132
8.2.1 The Airline Industry in Perspective	132
8.2.2 Coping with Crises in the Airline Industry	133
8.2.3 The Rise of Low-Cost Carriers	135
8.3 Prospects for Further Research	138
References	143
Appendix I – Freedoms of the Air	149
Appendix II – Low-Cost Carriers in Europe	153
Appendix III – List of Abbreviations	155
Appendix IV – Network Maps	157
Appendix V – Bonacich Centrality Results	165
Index	181