Contents

About the Author xi
Acknowledgements xiii

Introduction 1

Part 1: Transport Market Dynamics

Chapter 1: Market Demand 5
Transport as a Derived Demand 5
Factors Determining Demand 6
Case Study 1: Urban Bus Operations 15
Demand Patterns Not Influenced by Operators 17
Operator Attempts to Influence Demand 20
Peak Demand 21
References 34

Chapter 2: Elasticity of Demand 36
Price Elasticity of Demand 36
Case Study 1: Transatlantic Fares 37
Case Study 2: Coach/Rail Competition 39
Case Study 3: London Commuters 50
The Measurement of Price Elasticity 57
Income Elasticity 64
Service Elasticity 70
Case Study 4: Analysis of Eurostar and Eurotunnel Markets, 1992–97 70
Factors Determining the Magnitude of Elasticity 83
References 85

Chapter 3: The Supply of Transport 89
Introduction 89
Elasticity of Supply 91
Conclusion 94
References 94

Chapter 4: Pricing Policy 95
Introduction 95
Contents

Price Discrimination 95
Case Study 1: Railways – Market Segmentation/ Price Discrimination 101
Case Study 2: Airline Pricing 111
Case Study 3: The Low Cost Airline Market (Europe) 114
Case Study 4: MA Airways Ltd 121
Solutions for Low Profitability and Loss of Market Share 126
Case Study 5: Eurostar 134
Coach Pricing 135
Bus Pricing 137
Case Study 6: Under-18 Market 139
References 144
Further Reading 145

Chapter 5: Cost Levels and Structure – Road Transport 146
Price versus Quality 146
Bus Operating Costs 147
Case Study 1: Cost Reduction (Bus Industry) 161
References 161

Chapter 6: Cost Levels and Structure – Railways 163
The Privatised/Disaggregated Railway 170
Case Study 1: Costing the Integrated Railway – A Lesson for ‘New’ (2004) EU Member States 172
Case Study 2: Avoidable Cost (Railways) 175
References 179

Chapter 7: Cost Levels and Structure – Airlines 183
References 197

Chapter 8: Forecasting Transport Demand, Revenue and Expenditure 199
Economic Forecasting 199
Case Study 1: Forecasting Bus Costs and Revenue in a Shire County Funding Context 201
Case Study 2: The Impact of Channel Tunnel International Trains on Domestic Commuter Services 207
Case Study 3: Road Traffic Forecasting – Macro Economic Forecasts 217
Case Study 4: Forecasting Rail Passenger Demand – Elements in the Model 220
Case Study 5: Forecasting for an Integrated Transport Policy 223
Case Study 6: Forecasting Air Traffic Demand 225
Contents

Case Study 7: Eurotunnel: Forecasts of Freight and Passenger Traffic 230
Conclusion – Forecasting 235
References 235

Part 2: Public Policy

Chapter 9: Economic Appraisal – Techniques 241
The Argument for Government Investment in Public Transport 241
Cost Benefit Analysis 243
Case Study 1: Cost Benefit Analysis of Bus Subsidy 259
Case Study 2: Great Britain – Central London Rail Study 261
Case Study 3: Great Britain – Strategic Rail Authority 264
Case Study 4: European Commission – Socially Necessary Railway Services 272
Case Study 5: Sweden – Rail Infrastructure Company, Banverket (BV) 280
Case Study 6: Germany – Federal Traffic Infrastructure Plan 281
Case Study 7: The Netherlands – Rail Service Evaluation 283
Case Study 8: European Bank for Reconstruction and Development (EBRD) 285
References 290
Further Reading 293

Chapter 10: Economic Appraisal – Valuation of Elements 295
Purpose of Investment 295
An Appropriate Evaluation Technique 295
Environmental Considerations in New Infrastructure (Road, Rail, Airports) Investment 309
Definition of the Environment 314
Transport Investment Areas 316
Case Study 1: The Valuation of Time Savings 317
Case Study 2: Winners and Losers 321
Case Study 3: Private Capital Schemes 324
Case Study 4: Road Pricing: Market Forces in Public Policy 327
References 328

Chapter 11: Public Private Partnership (PPP) Investment 332
PPP Funding – Additional Investment or a Substitute for Public Sector Investment? 332
Value for Money 333
Transfer of Risk and Commercial Risk Premiums 334
Private Sector Enthusiasm for PPPs 334
Solutions to Primary Private Sector Concerns 336
References 415

Chapter 15: Transport and Economic Activity 416
Definition 416
Options for Growth 416
Forms of State Aid 417
Government Policy in Britain and in Ireland 418
The Atlantic ARC 420
Location Criteria – The Position of Transport 421
Do Roads Really Bring Economic Success? 424
Policy in Other EU Member States 428
Conclusion 429
References 431

Index 435
Transport Economics

Applied Transport Economics introduces the reader to the theory of transport economics through a range of practical examples. Professor Stuart Cole investigates the application of economic theory to commercial transport operations, public policy issues and the role of transport in its wider economic context, making this book essential reading for managers, policy makers and all economists with an interest in the practical application of theoretical models. The book is also designed to suit the needs of students of transport, economics, business, management, public policy and business strategy.

Now in its third edition, it has been extensively revised to take account of the many recent changes that have taken place within the transport sector. As well as covering all aspects of transport economics, including pricing policies, cost structures and public policy economic appraisal techniques, the author provides a clear analysis of changes to transport provision in Eastern Europe, and the case studies included throughout have been fully updated. Each chapter also contains a new bibliography and an extended further reading section.

Professor Stuart Cole has been Professor of Transport and Director of the Wales Transport Research Centre at the University of Glamorgan since March 2001. He has been the Specialist Adviser on Transport to the House of Commons Select Committee on Welsh Affairs since 1984. Professor Cole is also Chairman of the Chartered Institute of Logistics and Transport Cymru/ Wales (2003–2005), a past Chairman of the Institute of Highways and Transportation South Wales Branch, Chairman of the Wales Transport Strategy Group and a member of the Wales Transport Forum. He is a member of the First Great Western Stakeholders Advisory Group representing travellers, business and academia. Professor Cole is a regular broadcaster on BBC radio and television and on S4C in both Welsh and English.