

Contents

.....

Preface	ix
1 Transport and Economics	1
1.1 Transport economics	1
1.2 The emergence of modern transport economics	3
1.3 The scope of the subject	6
1.4 The economic characteristics of transport	13
1.5 The framework of the book	15
Further reading	18
2 Transport, Transport Markets and Transport Industries	19
2.1 Introduction	19
2.2 The global picture	20
2.3 Transport at the national level	29
2.4 Local transport	36
2.5 Emerging trends	41
Further reading	47
3 Movement, Transport and Location	48
3.1 The desire for movement	48
3.2 The 'chicken or egg' problem	49
3.3 Transport and industrial location	53
3.4 Gateways and corridors	60
3.5 Output, market area and transport costs	64
3.6 Urban transport and land values	68
3.7 Transport and urban wage rates	73
Further reading	76
4 The Demand for Transport	78
4.1 Introduction	78
4.2 Factors that influence travel demand	80
4.3 The notion of a 'need' for transport	96
4.4 The valuation of travel time savings	99
4.5 The demand for car ownership	108
Further reading	115
5 The Direct Costs of Transport	116
5.1 The supply of transport	116

5.2	Fixed and variable costs	118
5.3	Economies of scale, scope, density and experience	129
5.4	Specific, joint and common costs	133
5.5	Problems of common cost allocation – the road and rail track cases	135
5.6	Transport user costs and the notion of generalized costs	142
5.7	The bunching of services	147
5.8	Elements of economic performance	149
5.9	Costs and the measurement of economic efficiency	152
	Further reading	160
6	The External Costs of Transport	161
6.1	Introduction	161
6.2	What are externalities?	161
6.3	Transport and the environment	164
6.4	The valuation of externalities	167
6.5	The magnitude of the environmental externality problem	173
6.6	Energy use	187
6.7	Introduction to traffic congestion	191
6.8	The economic costs of congestion	197
6.9	Some refinements on the basic congestion model	199
6.10	Some broad aggregate calculations	204
	Further reading	205
7	Pricing of Transport Services	207
7.1	The principles of pricing	207
7.2	Matching supply with demand	208
7.3	Marginal cost pricing	212
7.4	Difficulties of 'second-best' situations	216
7.5	Price differentiation, price discrimination and yield management	218
7.6	Pricing with stochastic demand	235
7.7	The problem of the peak	237
7.8	Transport subsidies, operational objectives and pricing	241
7.9	Market instability, suboptimal supply and the empty core	244
7.10	Indirect pricing	247
	Further reading	250
8	Containing the Environmental Costs of Transport	251
8.1	Introduction	251
8.2	The basic approaches	252
8.3	The Coasian solution – tradable permits	253
8.4	The 'polluter-pays' principle	256
8.5	More on environmental standards	261
8.6	Transport subsidies and the environment	264

8.7	Protecting the sufferers	268
8.8	Energy use	270
8.9	Safety and accidents	279
	Further reading	283
9	Optimizing Traffic Congestion	284
9.1	The economic approach	284
9.2	'Road pricing'	285
9.3	Examples of urban road pricing	290
9.4	Some difficulties with road pricing	292
9.5	Outcomes of road pricing implementation	302
9.6	Parking policies	305
9.7	Congestion pricing at airports	307
9.8	Congested seaports	320
9.9	Non-congestion pricing options	321
	Further reading	325
10	Some Economics of Transport Logistics	327
10.1	Introduction	327
10.2	What is 'transport logistics'?	328
10.3	Transport costs, warehousing and inventory holdings	331
10.4	Consolidation and trans-shipment	335
10.5	The mode choice	337
10.6	Urban logistics	341
10.7	Green logistics	343
10.8	International logistics	346
10.9	Security	347
	Further reading	354
11	Investment Criteria – Private and Public Sector Analysis	356
11.1	The importance of infrastructure	356
11.2	Basic principles	358
11.3	Commercial and social approaches to investment	361
11.4	The theory of cost–benefit analysis	365
11.5	Coping with network effects	371
11.6	CBA in practice and variations on the theme	373
11.7	Comparability between appraisal techniques	382
11.8	Assessing the effect on national income	385
11.9	Some institutional considerations	388
	Further reading	391
12	Transport Planning and Forecasting	392
12.1	The development of transport planning	392
12.2	The theory of transport planning	396
12.3	Traffic modeling and forecasting	401

12.4	Sequential travel demand forecasting	405
12.5	Disaggregate modeling	412
12.6	Interactive and stated preference modeling	415
	Further reading	418
13	Transport and Development	419
13.1	Transport and economic development	419
13.2	Economic growth theory and transport	420
13.3	Transport infrastructure investment and economic productivity	426
13.4	The multiplier impacts of a transport investment	429
13.5	Transport economics in less developed countries	434
13.6	The transport policy of the European Union	441
13.7	Transport and regional and urban development	452
	Further reading	459
14	The Economic Regulation of Transport	461
14.1	The broad issues	461
14.2	Theories of regulation	463
14.3	The regulation of monopoly power	469
14.4	Priorities in transport policy	473
14.5	Alternative paths for regulatory reform	483
14.6	Studying regulatory reform	488
14.7	Coordination via the market, or by direction?	493
	Further reading	497
	<i>Index</i>	499