Chapter 1: Introduction

Chapter 2: Travel Demand

2.1 Aggregate Tabulations and Models
2.1.1 Aggregate Demand Models
2.1.2 Cross-Sectional Studies of Metropolitan Areas
2.1.3 Cross-Sectional Studies within a Metropolitan Area
2.1.4 Studies Using Time Series Data
2.1.5 Summary of Key Results of Aggregate Studies
2.1.6 Transportation and Land Use

2.2 Disaggregate Models: Methods
2.2.1 Basic Discrete-Choice Models
2.2.2 Estimation
2.2.3 Interpreting Coefficient Estimates
2.2.4 Data
2.2.5 Randomness, Scale of Utility, and Measures of Benefit
2.2.6 Aggregation and Forecasting
2.2.7 Specification
2.2.8* Ordered and Rank-Ordered Models

2.3 Disaggregate Models: Examples
2.3.1 Mode Choice
2.3.2 Trip Scheduling
2.3.3 Choice of Free or Express Lanes

2.4 Advanced Discrete-Choice Modeling
2.4.1 Generalized Extreme Value Models
2.4.2* Combined Discrete and Continuous Choice
2.4.3* Disaggregate Panel Data
2.4.4 Random Parameters and Mixed Logit
2.4.5* Endogenous Prices

2.5* Activity Patterns and Trip Chaining

2.6 Value of Time and Reliability
2.6.1 Value of Time: Basic Theory
2.6.2 Empirical Specifications
2.6.3* Extensions
2.6.4* Value of Reliability: Theory
2.6.5 Empirical Results

2.7 Conclusions
Chapter 3: Costs

3.1  The nature of cost functions

3.2  Cost functions for public transit
3.2.1*  Accounting cost studies
3.2.2*  Engineering cost studies
3.2.3  Statistical cost studies
3.2.4  Cost functions including user inputs

3.3  Highway travel: congestion technology
3.3.1  Fundamentals of Congestion
3.3.2  Empirical Speed-Flow Relationships
3.3.3  Dynamic Congestion Models
3.3.4  Congestion Modeling: A Conclusion

3.4  Highway Travel: Short-Run Cost Functions and Equilibrium
3.4.1  Stationary-State Congestion on a Homogeneous Road
3.4.2  Time-Averaged Models
3.4.3  Dynamic Models with Endogenous Scheduling
3.4.4  Network Equilibrium
3.4.5*  Parking Search
3.4.6  Empirical Evidence on Short-Run Variable Costs

3.5  Highway Travel: Long-Run Cost Functions
3.5.1  Analytic Long-Run Cost Functions
3.5.2*  The Role of Information Technology
3.5.3*  Empirical Evidence on Capital Costs
3.5.4  Is Highway Travel Subsidized?

3.6  Intermodal Cost Comparisons

3.7  Conclusions
Chapter 4: Pricing

4.1 Congestion Pricing of Highways

4.1.1 Static Congestion
4.1.2 Dynamic Congestion

4.2 Second-Best Pricing

4.2.1 Network Aspects
4.2.2 Time-of-Day Aspects
4.2.3 User Heterogeneity
4.2.4* Stochastic Congestion and Information
4.2.5 Interactions with Other Distorted Markets
4.2.6 Second-Best Pricing: A Conclusion

4.3* Congestion Pricing in Practice

4.3.1 Singapore
4.3.2 Norwegian Toll Rings
4.3.3 Value Pricing in the US
4.3.4 London Congestion Charging
4.3.5 Other Applications
4.3.6 Pricing Technology

4.4 Pricing of Parking

4.5 Pricing of Public Transit

4.5.1 Fare Level
4.5.2 Fare Structure
4.5.3 Incentive Effects of Subsidies

4.6 Conclusions
Chapter 5: Investment

5.1 Capacity choice for highways

5.1.1 Basic Results: Capacity Choice with First-Best Pricing and Static Congestion
5.1.2 First-Best Capacity in More Complex Settings
5.1.3 Second-Best Highway Capacity
5.1.4* Naïve Investment Rules

5.2 Cost-benefit analysis

5.2.1 Willingness to Pay
5.2.2 Demand and Cost Forecasts
5.2.3 Discounting Future Costs and Benefits
5.2.4 Shifting of costs and benefits
5.2.5 External Benefits and Network Effects
5.2.6 Conclusion: The Use and Misuse of Cost-Benefit Analysis

5.3 Conclusions
Chapter 6: Industrial Organization of Transportation Providers

6.1 Private Highways

6.1.1 Single Road with Static Congestion
6.1.2* Single Road with Dynamic Congestion
6.1.3 Heterogeneous Users
6.1.4 Private Toll Lanes: The Two-Route Problem Revisited
6.1.5* Competition in Networks

6.2 Regulation and Franchising of Private Roads

6.3 Privately Provided Transit Services

6.3.1 Forms of Privatization
6.3.2 Market Structure and Competitive Practices
6.3.3 Efficiency of Public and Private Providers
6.3.4* Experience with Privatization and Deregulation
6.3.5* Paratransit
6.3.6* Conventional Taxi Service

6.4 Conclusions

Chapter 7: Conclusion