SUMMARY

CONCESSIONING OF THE SOUTH AFRICAN COMMUTER RAIL SUBSYSTEM

This study investigates the concessioning of the commuter rail subsystem, which was discussed in the White Paper on National Transport Policy. The theoretical divide between private and public sector enterprise is investigated in terms of a principal-agent approach. The hypothesis underlying the fundamental shift of services traditionally provided by government enterprise to the private sector is X-efficiency gains under a concession regime. There are, however, potential challenges under a concession regime that must be anticipated. Challenges are identified in terms of an incomplete contract approach with its underpinning source manifested in a bounded rationality concept. The study investigates how rail concessionaires are regulated under a concession regime from an economics perspective and various price mechanisms are explored. The study provides strategies to deal with challenges under a rail concession regime with a view to minimising conflicts that will arise between the parties involved in a concession agreement.

KEYWORDS

Rail concessioning; incomplete agreements; bounded rationality; challenges; X-efficiency; price mechanisms; strategies; roles allocation; risk arrangements.
I wish to thank the following people for their valuable contributions to this study:

- Professor A Brits for his guidance and comments as my supervisor. Throughout my study period he provided valuable guidance and leadership without which I would not have completed this study.
- Ms Etrecia de Villiers. She was always ready to go the extra mile in finding and supplying me with the necessary source material.
- Mr A Wessels who was always ready to inform me about where study material was to be obtained and provided me with various articles from the National Department of Transport library.
- The Northern Centre of Development for the financial aid.
- Ms A Barnby for editing this study.
- Last, but not least, my family, particularly my wife Rosinah for giving me the necessary courage and support during the demanding period of this study.

Without your assistance and support I would not have succeeded in making a contribution in terms of this study.
TABLE OF CONTENTS

SUMMARY & KEYWORDS ......................................................... i
ACKNOWLEDGEMENT .......................................................... ii

CHAPTER 1

INTRODUCTION AND OUTLINE OF THE STUDY

1.1 Background................................................................. 1-10
1.1.1 Overview of the evolution of the rail industry in South Africa...... 1-4
1.1.2 Current transport policy environment............................... 4-8
1.1.3 Present South African commuter rail industry structural arrangements and some operational statistics ........................................... 8-10
1.2 Problem statement and purpose of the study........................... 10
1.3 Scope of the study........................................................... 11-12
1.4 Methodology.................................................................... 12-13
1.5 Arrangement of the chapters................................................. 13-14
1.6 Conclusion........................................................................ 14-15

CHAPTER 2

PRIVATE ENTERPRISE VERSUS PUBLIC ENTERPRISE THEORY

2.1 Introduction..................................................................... 16
2.2 Private enterprise theory.................................................... 16-20
2.2.1 Shareholders and monitoring problem............................... 17-18
2.2.2 Takeovers..................................................................... 19
2.2.3 Bankruptcy..................................................................... 20
2.3 Public enterprise theory...................................................... 21-23
2.4 Traditional private versus public enterprise debate............... 23-31
2.5 Competition and public enterprise...................................... 31-39
CHAPTER 3

THE POTENTIAL CHALLENGES IN THE RAILWAY CONCESSION-TYPE RELATIONSHIP

3.1 Introduction ................................................................. 49-50
3.2 The requirement for a complete and perfect contract ............. 50-51
3.3 Bounded rationality concept ........................................... 51-52
3.4 Incompleteness of contracts ............................................ 52-55
3.4.1 Investment challenge ............................................... 55-60
3.4.2 Commitment and reneging ......................................... 60-63
3.4.2.1 Towards achieving commitment .............................. 63-66
3.4.3 Bargaining and renegotiation ...................................... 66-70
3.4.4 Rent acquisition ....................................................... 70-72
3.4.5 The need for economic regulation ................................. 73-74
3.5 Conclusion ................................................................. 74-77

CHAPTER 4

CASE STUDIES OF CONCESSIONED RAIL SYSTEMS

4.1 Introduction ................................................................. 78-79
4.2 Background to British Rail franchising .............................. 79-80
4.3 Strategy underlying the structural reform of British Rail ........ 80-86
4.3.1 The railway activities that were to be privatised ............... 81-82
4.3.2 Railway activities to be franchised ................................ 82-84
4.3.3 Railway activities that were incentivised first within the public sector and later privatised ........................................ 84-85
4.3.4 Rail activities to be retained within the framework of government 85-86
4.4 Potential impacts of on-track competition 86-92
4.4.1 Market potential 88
4.4.2 Incumbent strategies 88-89
4.4.3 Entrant strategies 89-91
4.4.4 Incumbent’s response 91
4.4.5 Entrant’s response 91-92
4.5 Argentine rail reform 92
4.5.1 Background 92-93
4.5.2 Argentine rail strategy 94-100
4.5.2.1 Size-related issues 95-98
4.5.2.1 (i) Confronting the unions 96
4.5.2.1 (ii) Lowering capital barriers 96-98
4.5.2.2 Market failure and regulation issues 98
4.5.2.2 (i) Decentralisation of subsidy decisions 98-99
4.5.2.2 (ii) Creating competition for subsidised rail service 99
4.5.2.2 (iii) Residual regulation and regulatory institutions 99-100
4.5.2.3 Making rail attractive to investors 100
4.5.3 Outcomes 100-101
4.6 Privatisation of Japanese National Railways 102
4.6.1 Background 102-103
4.6.2 Japanese National Railway privatisation strategy 103-106
4.6.2.1 Redefining the scope of surviving business 104
4.6.2.2 Redefining assets and operations 104-105
4.6.2.3 Redefining the organisational structure 105
4.6.2.4 Restructuring the workforce 105
4.6.2.5 Restructuring JNR liabilities 106
4.6.2.6 Commercial reorientation of JR companies 106
4.6.3 Outcome of the JNR privatisation strategy 106-108
4.6.3.1 JR companies 106-107
4.6.3.2 Effect on labour 107
4.6.3.3 Effect on users 107
CHAPTER 5

THE RAIL TRANSPORT ECONOMIC REGULATORY ENVIRONMENT

5.1 Introduction................................................................. 112-113
5.2 The characteristics of rail transport.............................. 114-117
  5.2.1 The multi-product nature of rail industry.................... 114-115
  5.2.2 The cost structure of the rail industry....................... 115
  5.2.3 The role played by rail infrastructure....................... 115-116
  5.2.4 The existence of asset indivisibilities in the rail industry 116
  5.2.5 The organisation of rail transport as a public service........ 116-117
  5.2.6 Externalities in the entire transport system................. 117
5.3 Mechanisms for rail economic regulation...................... 118
  5.3.1 Price regulation.................................................... 118-125
    5.3.1.1 Rate of return mechanism................................. 118-121
    5.3.1.2 The price cap mechanism................................... 121-125
  5.3.2 Quality regulation in the rail industry....................... 125-127
    5.3.2.1 Instruments of quality control in the rail industry..... 127-129
5.4 Economic regulation of infrastructure.......................... 129-138
  5.4.1 The problem of infrastructure costs........................ 130-132
  5.4.2 Efficient component pricing rule............................. 132-138
5.5 Conclusion.................................................................. 138-140

CHAPTER 6

STRATEGY FOR THE CONCESSIONING OF A COMMUTER RAIL
SUBSYSTEM IN SOUTH AFRICA

6.1 Introduction................................................................. 141-142
6.2 The objectives of commuter rail strategy ........................................ 142-144
6.3 Strategy for restructuring commuter rail....................................... 144-151
6.3.1 The vertically integrated railway option ..................................... 146-149
6.3.2 The vertically separated railway option ..................................... 149-151
6.4 Strategy for the concession agreement ......................................... 151-161
6.4.1 Strategy for risk-sharing arrangements ..................................... 154-156
6.4.2 Size of the concession .......................................................... 157-159
6.4.3 Duration of the concession .................................................... 159-161
6.5 Strategy for economic regulation ................................................ 161-165
6.5.1 Approach to be used ............................................................ 161-163
6.5.2 Desirable qualities of the economic regulator ............................... 163-164
6.5.3 Role of the rail economic regulator ......................................... 164-165
6.5.4 Possible economic regulatory institution .................................... 165
6.6 The impact of labour legislation on the commuter rail strategy ...... 165-166
6.7 Strategy to assess the effectiveness of a commuter rail concession    
regime ......................................................................................... 167
6.8 Conclusion .................................................................................. 167-169

CHAPTER 7

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction .................................................................................. 170
7.2 Private enterprise versus public enterprise theory ....................... 170-172
7.2.1 Findings .................................................................................... 170-171
7.2.2 Conclusion ................................................................................ 172
7.2.3 Recommendations ..................................................................... 172
7.3 The potential challenges in the railway concession-type 
relationship ....................................................................................... 172-174
7.3.1 Findings .................................................................................... 172-173
7.3.2 Conclusion ................................................................................ 173
7.3.3 Recommendations ..................................................................... 173-174
7.4 Study cases of concessioned rail systems ....................... 174-175
  7.4.1 Findings ................................................................. 174-175
  7.4.2 Conclusion .............................................................. 175
  7.4.3 Recommendations ..................................................... 175
7.5 The rail transport economic regulatory environment ............ 175-177
  7.5.1 Findings ................................................................. 175-176
  7.5.2 Conclusion .............................................................. 176
  7.5.3 Recommendations ..................................................... 176-177
7.6 Strategy for concessioning the commuter rail subsystem in
  South Africa ................................................................. 177-179
  7.6.1 Findings ................................................................. 177-178
  7.6.2 Conclusion .............................................................. 178
  7.6.3 Recommendations ..................................................... 178-179

BIBLIOGRAPHY ................................................................. 180-187

Annexure 1
Annexure 2
Annexure 3
# LIST OF FIGURES AND TABLES

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>Figure</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Technical and allocative efficiency</td>
<td>24</td>
</tr>
<tr>
<td>2.2</td>
<td>Economies and diseconomies of scale</td>
<td>32</td>
</tr>
<tr>
<td>2.3</td>
<td>Relation of average costs to demand</td>
<td>33</td>
</tr>
<tr>
<td>2.4</td>
<td>Economies of scope</td>
<td>36</td>
</tr>
<tr>
<td>3.1</td>
<td>Simple contracting schema</td>
<td>57</td>
</tr>
<tr>
<td>4.1</td>
<td>A schematic representation of competitive response dynamics.</td>
<td>87</td>
</tr>
<tr>
<td>4.2</td>
<td>Dimensions of privatisation difficulty</td>
<td>94</td>
</tr>
<tr>
<td>5.1</td>
<td>Two alternative forms of bottleneck case</td>
<td>134</td>
</tr>
<tr>
<td>6.1</td>
<td>Risk transfer and optimal value for money</td>
<td>155</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>Table</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Offering trust</td>
<td>64</td>
</tr>
<tr>
<td>3.2</td>
<td>Efficient outcome with different possible valuations</td>
<td>68</td>
</tr>
<tr>
<td>6.1</td>
<td>Different rail regulatory scenarios and their objectives</td>
<td>143</td>
</tr>
<tr>
<td>6.2</td>
<td>Role assignment in railway concessioning</td>
<td>153-154</td>
</tr>
</tbody>
</table>