

SEPARATION OF RAIL INFRASTRUCTURE OWNERSHIP FROM OPERATION: IS IT A FEASIBLE MODEL FOR THE SOUTH AFRICA RAIL TRANSPORT INDUSTRY?

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ABSTRACT

The question whether the separation of rail infrastructure ownership and operation is the best model to be used has been a subject of much debate in the transport industry. Rail industry in the United Kingdom is subject to separation of infrastructure ownership and operation. Railtrack Plc and now Network Rail owns and manages infrastructure while operations is done by up to 25 Train Operating Companies (TOCs), who have franchises to operate on certain routes for a predetermined period. Rolling Stock is owned by three Rolling Stock Companies (ROSCOs) who in turn lease them to TOCs (Charlton et al., 1997). Infrastructure maintenance and track renewal is contracted to British Rail Infrastructure Companies (BRISCOs) by Network Rail. However, in South Africa infrastructure ownership and operation remain respectively the sole responsibility of the South African Rail Commuter Corporation (SARCC) and Metrorail. SARCC is an agent of the Department of Transport (DoT) while Metrorail (a division of Transnet) report to the Department of Public Enterprises. Therefore, infrastructure ownership and operation remain the responsibility of two government departments. This paper seeks to interrogate various models of infrastructure ownership and operation employed in the rail industry in various parts of the world. In particular, the paper will review methods used in countries such as the United Kingdom and Argentina. The paper will also evaluate successes and failures of these methods and identify lessons that can be learned for the South African rail industry. This paper hopes to stimulate debate around privatisation of the rail industry and also hope to give policy direction based on experiences learned from other countries.

1. INTRODUCTION

For much of the 20th century, rail transport in South Africa was a vertically integrated state monopoly under ministerial control. The South African Railways and Harbours and subsequently the South African Transport Services controlled every aspect of the transport system ranging from permanent way, modal facilities such as stations, rolling stock, operations and administration. Government had to decide and determine which services were to be provided to essentially captive customers.

The past five years has seen dramatic innovative changes in views about how rail transport should be owned, organised and regulated. The new model calls for increased reliance on private infrastructure, which is aimed at improving efficiency, promoting innovation and enhancing service quality. It is on the basis of this new unfolding trend that the Gauteng Provincial Government, come with the Gautrain Rapid Rail Link initiative.

2. WHAT IS THE PROBLEM?

The South African Government has for years been a transport regulator, provider of infrastructure and transport operator. It did not focus much attention on the formulation of policy and in strategic planning. According to the White Paper on National Transport Policy, the Government seeks a reduced direct involvement in operations and provision of infrastructure and services, to allow for a more competitive environment (Department of Transport, 1996).

Rail transport in South Africa is experiencing a decline in performance and several factors have contributed to this situation.

The following factors are said to have contributed to the decline of rail transport internationally:

- Growing competition from more advanced transport modes. For example, advances in the aircraft and automobile industry, made rail transport less competitive;
- Monolithic industry structures and rigid management structures unresponsive to customer needs and market opportunities;
- Outdated technology and obsolete rolling stock; and
- A shift away from bulk commodities toward high value products increased the importance of quality and timely delivery, which is lacking in rail transport.

3. PURPOSE OF THE PAPER

This paper looks at the separation of infrastructure ownership from operation and the merits of Public Private Partnerships in the rail industry. The authors have taken cognisance of the fact that people have mixed feelings about Public Private Partnerships and as a result, have been divided along ideological lines. This paper seeks to look at arguments for and against Public Private Partnerships. As several countries are moving towards engaging the private sector in the rail transport industry, questions arise whether the separation of infrastructure from operation is indeed a better available model.

This paper also looks at various models of Public Private Partnership available and adopted by Britain and Argentina. Much focus will be directed at British Rail for the simple reason that its Public Private Partnership record appears to be unique. The final section of this paper will review suburban rail transport in South Africa particularly after the merging and consolidation of Metrorail, South African Rail Commuter Corporation and Spoornet's long distance passenger services (Shosholoza Meyl). This paper will try to make recommendations on an appropriate model that would encourage public private partnership and thus contribute to the accomplishment of South Africa's vision and mission for rail transport.

4. WHAT HAS GONE WRONG WITH MONOLITHIC ENTITIES?

The performance of monolithic entities varied considerably across countries. In many developing and transition economies, these entities suffered from low labour productivity and poor service quality. According to Kessides, (2004:3), in the early 1990's, many of the developing countries suffered technical inefficiency in rail transport. With the growing need to maintain and expand infrastructure services, most developing and transition economies were under profound pressures for infrastructure reform and South Africa was not an exception.

5. WHY CONSIDERING INFRASTRUCTURE REFORM?

Driven by technological progress and considerable advances in economic thinking, many of the industrial, developing and transition economies have considered implementing infrastructure reform. These institutional reforms entail a combination of competitive restructuring, public private partnership and the establishment of regulatory mechanisms.

For the fact that the transport system operates in a turbulent competitive environment, there is a critical need to rebalance the roles of the private and public sectors. Investors demand cost reflective tariffs before they could commit their capital and expand networks. Currently, monolithic entities should rightfully be unbundled and form distinct activities with entirely different economic characteristics. Kessides, (2004:4) is of the view that in rail transport, tracks, signals and other fixed facilities should be separated from train operations and maintenance.

6. INTERNATIONAL EXPERIENCE IN INFRASTRUCTURE REFORM

Worldwide, the process of deregulating and involving the private sector in the transport system has become a central dynamic point over the past two decades. Many academics throughout the social sciences refer to this as a neo-classical hegemony that now orientates, perhaps even dominates, policy in the western and developing worlds (Charlton, et al., 1998). Transport has by no means been isolated from this movement towards a widespread acceptance of neo-liberalism. The policies of market liberalisation, deregulation and the involvement of the private sector have in the past ten years had a widespread impact on commercial aviation, bus, coach and rail transport. However the application of neo-classical agenda to transport is contested, both in terms of transport performance and the quality of services offered under the reformed regimes, and with respect to the wider environmental, social equity and political implications. Public private partnership and regulation of rail transport reflects the view that the state should limit its role to the adoption of minimal regulations that would ensure fair competition and safe operation of transport services (Green, 1987). This policy is underpinned by the Theory of Contestable Markets which contends that the key mechanism for improving efficiency and maximising user benefit is competition simulated by the free entry of new (private) operators into the transport market (Baumol, 1982). Whether public private partnership does indeed result in its intended objectives or not is a subject of much debate worldwide.

6.1 Separation of Rail Infrastructure Ownership from Operation (British Rail Experience)

According to Sader (2000), for the longest time, British Rail (BR) was a state-owned company that required substantial annual subsidies from the general budget. The government therefore passed a new Railways Act to reorganize the operation and to prepare the company for privatization. In the Railways Act of 1993 the government decided that competition had a vital role to play in increasing railway efficiency. The Railways Act split the responsibility for the ownership and operation of the infrastructure (track, stations, signalling, electrical supplies for trains, and management of timetables) from operation of train services. Passenger rolling stock was also separated and ownership of the fleet was divided among three leasing companies, which would in turn lease them to the train operating companies.

By mid-1997, the old monopoly had been broken up into about 75 separate companies and sold to the private sector. At the center of the new market structure is Railtrack, which is responsible for the maintenance and operation of all tracks, signaling and bridges. The bulk freight services were sold primarily to English, Welsh & Scottish Railway, a subsidiary

of Wisconsin Central Transportation, which obtained four of the five concessions. Passenger transport services were sold in 25 separate franchises, primarily to British bus companies. These franchises were bid out based on minimum subsidy required, with subsidies to be phased out over the franchise period. Initial subsidy payments by the government increased from an estimated £700 million to £2 billion, but with the expectation that service efficiency would improve drastically through substantial additional investments.

Bulk freight transport has expanded rapidly in recent years, with significant improvements in efficiency. The performance of Railtrack and many of the passenger franchises, however, was criticized by the government's rail regulator. Railtrack faced potential penalties for not fulfilling its investment commitments. Some passenger franchises failed to meet minimum reliability and punctuality requirements, primarily because of a lack of experience by the new owners in rail operations. The government therefore announced that it would impose fines and is contemplating license changes, even including the rescinding of franchises.

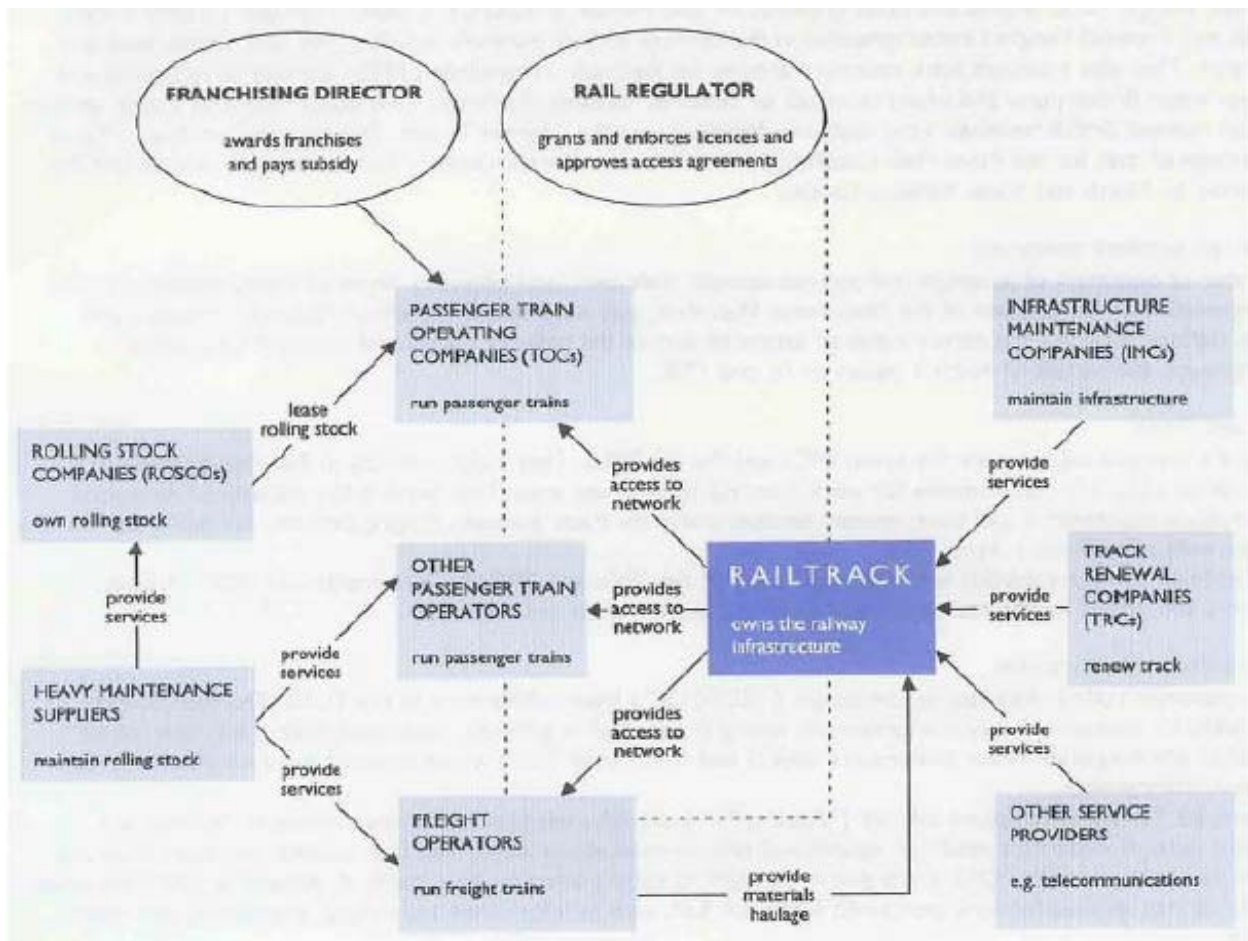


Figure 1. The organisation of British Rail after privatisation.

Infrastructure was handed over to Railtrack, which was tasked with owning and maintaining the tracks and fixed facilities. Operation was split into 25 passenger franchises all of which were competitively awarded to private operators for 5 to 15 years on the basis of minimum financial contribution required from the government. Figure 1 depicts the organisation of British Rail after privatisation. The government created two more regulatory bodies in addition to the Safety Regulator: Office of Passenger Rail Franchising (OPRAF) and Office of the Rail Regulator (ORR). A Franchising Directorate was created to award

franchises to train operating companies (TOCs) and to administer the payment of subsidies to operators. The Rail Regulator's responsibilities were to grant and enforce licences as well as approving track access agreements. This was important as it ensured that Railtrack's monopoly activities were regulated. Maintenance and track renewal was sold to 13 geographically based companies with full contracts with Railtrack.

6.2 Dealing with the Entire Network: Argentinean Rail Concessions

During the early 1990s, Argentina managed to restructure its entire railway sector through the concessioning of operations to private investors. By 1990, the state owned railroad company Ferrocarriles Argentinos (FA) operated about 35,000 kilometers of track with 92,000 employees and made annual losses of about \$1.4 billion. A lack of regular maintenance and rehabilitation investments led to deteriorating technical conditions of tracks and rolling stock, resulting in a steady decline of all types of rail transportation such as freight transport and intercity passenger services as well as commuter rail operations. The government found itself in no position to continue funding these operations, never mind undertaking the urgently needed new investments. It therefore decided to split Ferrocarriles Argentinos into a series of independent operating units, and to invite private investors for the operation and maintenance wherever possible. More or less 27,000 kilometers of freight rail lines were partitioned into six packages and concessioned to private investors during 1991-93. All the winning consortia included operating companies from North America and substantial participation by foreign investors. Investors received a 30-year concession with an optional 10-year extension to operate freight services as well as the maintenance and rehabilitation of rolling stock and tracks in exchange for the payment of an annual fee to the government. Since then, freight traffic has grown, but not as strongly as projected, resulting in revenue shortfalls in several lines.

Commuter rail lines in Buenos Aires metropolitan area were judged not to be commercially viable, but socially too important as a means of commuter transport to be closed down. The government therefore decided to offer seven lines plus the city subway system to private operators on a concession basis, with the minimum subsidy required as the deciding criterion for the award. All concessions were awarded, again dominated by foreign operators and investors, resulting in an expected annual subsidy requirement of \$150 million.

The intercity passenger services were also determined to be economically viable, and the government opted to offer these services to the provinces, which could enter into a concession agreement with the central government if they decided to provide the required subsidies to maintain the service. Most provinces declined the option, and most intercity services have since been shut down. The necessary labour retrenchment in all rail services was supported by the government through severance payments with the help of World Bank loans. Overall employment was reduced by over 80 percent, with the new private operating companies maintaining about 17,000 of the original employees. There are however, various public private partnership models that can be considered in the rail transport industry.

7. PUBLIC PRIVATE PARTNERSHIP MODELS

7.1 Regionally Integrated Model

According to this model, the railway monopoly is broken into regional integrated services and sold to the private sector (Freeman, et al., 2002). This is the model applied in the rail privatisation in Japan. The advantage of this model is that the size of the monopoly is

substantially reduced. This model also facilitates regionally integration and coordination of services. As services are broken down regionally, the model promotes regional vertical integrated units. This model did not appeal to the British Rail as it was thought that it would not result in competition, which was the intended objective of the privatisation process.

7.2 Vertically Integrated Model

According to this model, the rail transport is not broken down into smaller units but it is sold as a complete unit to the private sector. The new company owns and operates infrastructure, owns and maintain the rolling stock as well as operating train services. This model is basically replacing a public monopoly with a private and it did not appeal to British Government. A principal objective of the White Paper is to improve the quality of railway services through the promotion of competition (Department of Transport, 1996). Clearly this model does not lead to competition but continues to promote dominance by one company. It will therefore not be applicable in South Africa.

7.3 Integrated Sectoral Units Model

According to this model, the railway company is broken down into integrated Sectoral units with controlled network access as needed by each unit (Thompson, 2004). In the BR example the following Sectors can be identified: Intercity, London and South East, Provincial and Freight. The main advantage of integrated Sectoral units is that it creates better market focus by each sector. However, the main drawback of the model is that it can lead to problems regarding track access rights and real problems of cost allocation. If such model is considered for application in South Africa, one has to ensure that the joint and common cost structures are sorted out first.

7.4 Design Build Operate and Maintain (DBOM) Model

This is an alternative model of passenger rail franchising and it has been applied for the first in Britain for Greater Manchester's Metrolink. In this model operation and maintenance of railway services is privatised, with freedom to set fares, whilst public ownership of infrastructure and rolling stock is retained (Knowles, 1998). Under DBOM contract Metrolink was franchised to a private sector consortium for 15 years for a premium of just £5 million. The condition for this contract was that the London Rail Transport system must be operated by the private sector without revenue subsidy from the Government.

Under this model public subsidy has been eliminated while the competition for a DBOM tender resulted in a premium of £5 million from the private sector. Consumers have also benefited from this model as rail journeys have doubled and car trips and road traffic has been reduced. In the case of South Africa, if the long-term aim of the Department of Transport is to eliminate the flow of subsidies from National Treasury, then this model would be appropriate for implementation.

7.5 Public Ownership of Infrastructure and Private Operation Model

The most common model of rail privatisation is where public ownership of infrastructure and rolling stock is retained while operation of train services is done by the private sector. The Argentina rail privatisation is an example of this model. This is done through horizontal unbundling and privatisation of the railway services through concessions (Estache, et al., 2004). The fully integrated and centralised network was divided into separate businesses: metropolitan commuter rail, freight services and intercity passengers. Concessionaires were given the freedom to introduce new working rules and practices. According to this

model the concessionaires have to pay a fee for the use of the infrastructure, and undertake project-specific annual investment as specified in the terms of the concessions. The length of the commuter rail concessions was 10 years. Metropolitan railway concessions were awarded on the basis of the single parameter, *i.e.* the concessionaire requires the lowest subsidy to operate the line and undertakes the specified investment and rehabilitation program.

8. LESSONS FOR SOUTH AFRICA

The question is, derived from the international experience, is public private partnerships applicable to the South African situation? It is clear that the Government seeks to create a competitive environment in the provision of transport services. However, the Government realises that it has to retain its role as a regulator of safety and to control market access for transport operators and to prohibit excessive tariffs in the case of monopolies. Given a range of models above that were tried internationally, it is evident that the involvement of the private sector in the rail transport industry is a strategic must. For the Department of Transport to retain its role as a regulator of safety, it needs a safety regulator, and it has already established one. For it to control market access for transport operators and prohibit excessive tariffs, it needs an Economic Regulator or (Franchise Directorate). The British Government chose the model that revolves around the Common Carrier (CC). The advantage of this model is that it allowed the monopoly to be broken down without the need for an entirely new infrastructure (Charlton, et al., 1997). Based on this model, the CC is the monopolistic fulcrum around which the competitive remainder of the industry can organise itself.

	Public sector			Private sector	
	DOT	Prov. DOT	Transport Authorities	Private sector	Community
Policy making					
Planning					
Maintenance				■	
Ownership	■				
Funding				■	
Operation				■	

Figure 2. The roles played by different sectors in the transport planning process.

9. TRANSPORT PLANNING DIMENSION IN SOUTH AFRICA

The government's vision for the development of the country's transport system is set out in the National Transport Policy. The Moving South Africa Strategy document outlines the economic goals that the government aims to achieve and a broad strategy for their realization. One theme that lies at the heart of vision 2020 which is embedded in the strategy document is the refurbishment and development of the country's core economic infrastructure. Figure 2 depicts the roles played by different sectors in the transport planning process.

9.1 Funding Approach

9.1.1 Expenditure on Transport Policy

The Department of Transport has spent R26,039m over the 2003/04 financial year for the development and monitoring of policies. This includes strategies that cover all modes and users in the transport sector. This merely reflects how things are being done currently. The rectangular dot shows the DOT's area of responsibility and the solid line denotes the area over which the DOT has influence. The dotted line pointing towards the DOT shows the participation of stakeholders during the policy making process. In terms of the new transport planning dimension as contained in the National Land Transport Transition Act, provinces as well as Transport Authorities play a significant role in the planning of rail transport. Both the Provinces and Transport Authorities should therefore make provision for Transport Policy initiatives. This would in a way augment what has already been budgeted at the National level.

9.1.2 Planning

In terms of rail transport planning, it is evident that currently it is still the Department of Transport's domain. However, due to the unfolding land transport legislative framework, it is imperative that both the Province and Municipalities take ownership of the planning initiatives. It will therefore be required that funding be provided from both Municipalities and Provinces.

9.1.3 Maintenance

When considering a public private partnership approach, the maintenance of infrastructure could be outsourced to the private sector while publicly owned. This could be done in the same fashion as BRISCOs took the responsibility of infrastructure maintenance in the UK. In this way, outsourcing maintenance would reduce government expenditure quite substantially.

9.1.4 Ownership

The ownership of the rail infrastructure could still be with government. The advantage is that government has the power of eminent domain should it be required that any further expropriation be done. In terms of the rolling stock ownership, the private sector could be brought in to serve as a franchisor and such rolling stock would be leased for a specific period of time. This would be an opportunity to involve the private sector in the rail transport industry.

9.1.5 Funding

Currently, the Department of Transport is funding for both the rolling stock and infrastructure. In essence this should be transferred to the private sector through various models such as the concessioning, franchising, and lease options. The advantage of these options would then lessen the fiscal burden on the part of the Department of Transport.

9.1.6 Operation

It is very explicit that the Department of Transport endeavours to move away from the operation field. The Department is mainly engaged in policy and strategic planning issues. Operation would therefore be done by the private sector. The government's involvement in this regard would be the provisioning of subsidy to ensure that the operation is sustainable.

10. CONCLUSION

Separation of infrastructure ownership from operation in the rail industry is no doubt becoming a norm worldwide. BR experience involved placing operation on the hands of private companies and handing operations to a government agency, Railtrack. The demise of Railtrack and the subsequent introduction of Network Rail, a 'not-for-profit' body charged with running the rail infrastructure, indicate the government's search for a viable model of managing the rail industry. The Future of rail white paper (DfT, 2004) indicates another attempt to reshape the British Rail industry. There are various models of public private partnerships that can be adopted ranging from regionally integrated units, DBOM, sectorial units to concessioning as applied in Argentina. Based on lessons learned from other countries, it is clear that South Africa will need the assistance of the private sector to revive the rail industry. According to the White Paper and the Moving South Africa Action Agenda, the government is looking at promoting the use of public transport over private transport. However, the success of such a shift from private to public transport will depend on the quality of public transport offered. At present the investment in rail is decades behind with aging rolling stock. Public private partnership in the rail industry will ensure that new investments are made in the form of new rolling stock which will in turn attract people to commuter rail. It can be concluded that rail transport will need the full involvement of the private sector to ensure that funding and risks are apportioned to the right stakeholders. Figure 2 above depicts each stakeholder's role in the rail transport fraternity. It must however, be accepted that public private partnership is a very difficult subject and this paper is by no means exhaustive of the subject. It is hoped however that this paper will initiate debate around public private partnership in the rail transport industry in South Africa. Lessons from around the world indicate that the country has to be thoroughly prepared for the challenges that often accompany public private partnership and it is therefore hoped that this paper will create such awareness to policy and decision makers.

11. REFERENCES

- [1] Baumol, WJ, 1982. Contestable Markets: an uprising in the theory of industrial structure. *American Economic Review* 72, 1-15.
- [2] Bradshaw, WP, 1997. Competition in the rail industry. *Oxford Review of Economic Policy*, 13 (1) p.93-103.
- [3] Charlton, C., Gibb, R. and Shaw, J, 1997, Regulation and continuing monopoly on Britain's railways. *Transport Geography*, 5 (2) p.147-153.
- [4] Charlton, C and Gibb, R, 1998. Transport deregulation and privatisation. *Transport Geography*, 6 (2) pp.85.
- [5] Department of Transport, 1992. *New Opportunities for the Railways: the Privatisation of British Rail, White Paper*. HMSO, London.
- [6] Department of Transport, 1996. *White Paper on National Transport Policy*, Pretoria.

- [7] Department of Transport, 1996. Rail Privatisation Programme: Sales Completed or Agreed/Franchises Awarded as at 22 October 1996. Unpublished information document.
- [8] Estache, A, Cabajo, JC, and de Rus, G, 2004. Argentina's Transport Privatisation and Re-regulation: Ups and Downs of a daring decade-long experience. The World Bank Group, Washington, D.C.
- [9] Green, D, 1987. The New Right – the Counter Revolution in Political, Economic and Social Thought, Wheatsheaf, London.
- [10] Kessides, I.N. 2004. Reforming Infrastructure: Privatization, Regulation, and Competition. Washington DC: The World Bank.
- [11] Knowles, RD, 1998. Passenger rail privatization in Great Britain and its implications, especially for urban areas. Transport geography, 6 (2) p.117-133.
- [12] Department of Finance. 2004. National Treasury: Estimates of National Expenditure. Pretoria.
- [13] Sader, F. 2000. Attracting Foreign Direct Investment Into Infrastructure: Why is it so difficult? Washington DC: The World Bank.
- [14] SBC Warburg, 1996. Rail Track Share Offer: Mini Prospectus. SBC Warburg, London.
- [15] Thompson, LS, 2004. Privatising British Railways: Are there lessons for the World Bank and its borrowers? The World Bank Group, Washington, D.C.
- [16] Wharmby, B, 1993. The regulator's perspective of the electricity industry. Electricity Privatisation – Opportunities and Constraints. IEE, London.
- [17] World Bank, 2005. Private Solutions for Infrastructure in Rwanda. Washington DC: The World Bank.