

# HOW TO GET VALUE FOR MONEY THROUGH PRIVATE SECTOR PARTICIPATION IN RAIL PASSENGER SERVICE DELIVERY – INTERNATIONAL EVIDENCE\*

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## ABSTRACT

African cities largely rely on road transport solutions, while on other continents rail performs a vital role in moving large passenger volumes. The question of how best to secure value for money in the delivery of urban and interurban rail services through private sector participation has become a major issue. Investment in transport infrastructure and improved service delivery will be essential for increasing urban mobility and improving African cities' competitiveness. There is considerable interest in understanding the different approaches to securing private sector participation in rail service delivery around the world. With the right framework, the private sector can transform the levels of rail investment, efficiency and service delivery. This paper presents the international evidence, focusing on the most important cases in Latin America, Europe and Australia. As well as reviewing the academic literature, it presents new research quantifying the impacts of the various alternatives on usage, efficiency, innovation and the passenger experience. It also sets out the results of an interview programme with operators, government and regulators. Finally the general lessons that can be learnt are summarised.

## 1 INTRODUCTION

The railways in Great Britain were privatised following the Railways Act in 1993. Since then, the structure of the industry has evolved significantly. The purpose of this paper is to reflect on the success – or otherwise - of this privatisation and to compare it with international experience, with a view to identifying improvements for railway passenger service delivery. The British reforms were by far the most radical attempt to involve the private sector in reviving the fortunes of the rail industry anywhere in the world, and the paper thus focuses on these and how the experience in Britain compares against

experience elsewhere. The paper's conclusions are however relevant for Southern Africa as private sector participation could help to source investment and improve the efficiency and effectiveness of the region's railways.

We first review the British experience in order to identify the key issues requiring resolution. We then outline four case studies – Sweden, Germany, Melbourne and Latin America – in order to draw on overseas experience from a range of different railway reforms. Finally we seek to draw conclusions on how best to get value for money from private participation in provision of rail passenger services.

## **2 EXPERIENCE IN BRITAIN**

### **a. Overview**

Following the Railways Act 1993, British Rail was 'unbundled' to introduce competition in each of its constituent elements.

- Rail infrastructure was privatised as Railtrack PLC, later following its bankruptcy to be succeeded by Network Rail, a not for profit company.
- Infrastructure maintenance and renewals were placed in separate companies and privatised to secure competition for contracts for this activity. Many of these functions have subsequently been brought into Network Rail.
- Passenger rail operations were disaggregated and franchised by means of competitive tendering as 25 Train Operating Companies (TOCs), now rationalised to 19 TOCs, for contracts (franchise agreements) of between 6 and 25 years.
- Rolling stock assets were transferred to three Rolling Stock Leasing Companies (ROSCOs), which lease rolling stock to the TOCs.

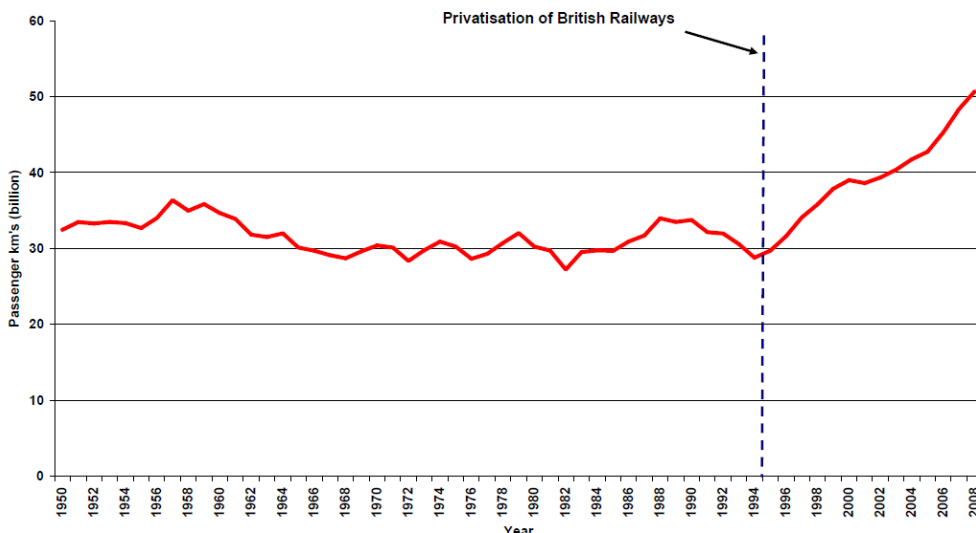
In this way, competition was introduced throughout as much of the industry as possible. As British Rail was not allowed to bid for franchises, the entire delivery of passenger services transferred to the private sector.

There have been some instances where the TOCs have delivered infrastructure enhancement projects. One example is Chiltern Trains Ltd which has held its franchise since privatisation having had its contract renewed in 2002. The long franchise has allowed it to embark on ambitious investment schemes to significantly increase capacity on its route between London and Birmingham. A key element is that Chiltern have adopted innovative procurement methods such as Design Fund Build and Transfer to minimise procurement costs. After construction the assets are transferred to Network Rail. However, most franchise agreements have been too short for this kind of development, and infrastructure investment has been delivered by Network Rail funded by government.

Most contracts are net cost but there are examples of gross cost contracts, including London Overground Rail Operations Ltd (LOROL) let by TfL for the operation of the London orbital network. The key reason for the tendering of LOROL as a gross cost contract is that there are considered to be significant overall contract savings from transferring revenue risk from the operator to TfL (NERA Economic Consulting, 2007).

### **b. Results of privatisation**

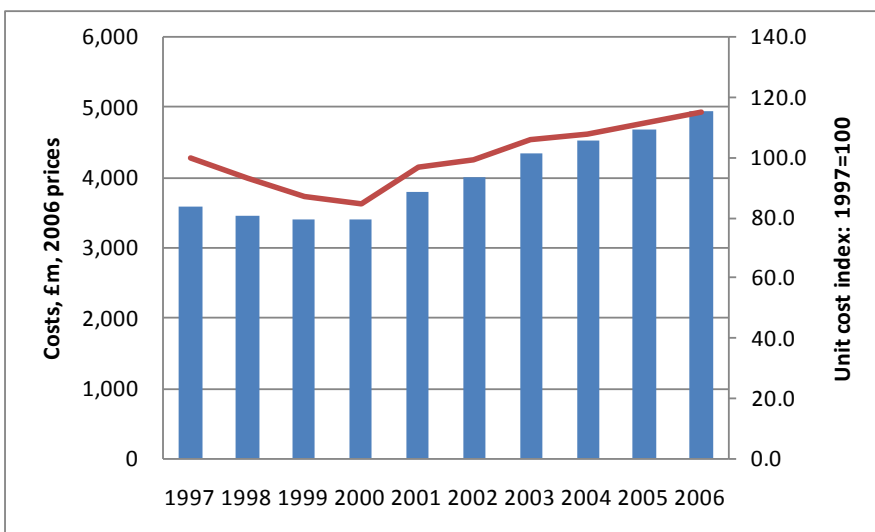
In some respects, the privatisation appears to have been very successful. Passenger demand has grown significantly as Figure 1 shows. Research (Wardman, 2006) suggests that this is predominantly due to exogenous factors such as GDP growth, employment, fuel price and road congestion, but that improved marketing has had an impact. Moreover, the new structure has facilitated an expansion in capacity (particularly rolling stock) necessary to permit this growth.



**Figure 1: Rail Passenger traffic in Great Britain (Transport Trends and National Rail Trends)**

Along with this growth in demand, the average age of rolling stock has come down, and measures of passenger satisfaction have also shown improvement. However, a recent Competition Commission report (2009) on the efficiency of the rolling stock leasing market highlighted that the short lease lengths for some franchises result in little incentive for ROSCOs to compete on lease rental charges as most rolling stock on the network normally has alternative uses due to rising demand.

Whilst passenger demand has grown, costs have also grown. Much of this was associated with the infrastructure where, following the fatal accident at Hatfield in 2000, a major increase in spending on maintenance and renewals took place. Smith, Wheat and Nash (2010) showed that whilst train operating costs fell immediately after privatisation, this trend was subsequently reversed (Figure 2). They found that passenger rail services in 2006 cost 12% more in real terms than at privatisation, and some 29% more than in 2000. However, they found evidence that costs began to fall between 2006 and 2008, following competitive re-franchising. This contrast to other sectors of the economy, including buses, refuse collection, and hospital cleaning (Domberger, Meadowcroft, and Thompson 1986 and 1987), where competitive tendering has invariably led to significant cost savings.



**Figure 2: Passenger train operating costs in Great Britain (Smith and Wheat [2009]).**

A number of cost drivers were identified:

- Increased staff wages above the growth in average earnings from 2000 to 2006.
- Increased diesel prices, doubling in real terms between 2000 and 2006.
- Inefficiencies experienced by those TOCs that have had their franchises re-negotiated or been placed on management contracts following financial problems
- Improved quality of rail service. For example, TOC caused delays (per train-km) fell by 11.4% between 2000 and 2006.

The amount of risk transference to the private sector has been a matter of debate. The general use of net cost contracts transferred revenue risk to the franchisee but arguably at a cost in terms of bidding and franchise costs. The House of Commons Transport Committee (2006) argued that actual risk transfer to the private sector has been limited. They quoted examples such as the fact that franchise agreements insulate TOCs from changes in track access charges and the cost of industrial action. More importantly, a franchisee is able to surrender a franchise relatively easily, thus in effect benefiting from profit in the good times and being able to walk away, albeit sacrificing performance bonds, when times are more difficult. More recently franchises have included risk sharing under which if revenue fell more than 6% below forecast the government would bear 80% of the cost (and vice versa in the case of revenue increases).

The relatively short franchises in Britain (generally 7-10 years) meant that in general franchisees played little role in infrastructure investment. As against this, short franchises obviously force the franchisee to face competition more frequently.

The relationship between the train operators and Network Rail has had its problems. In interviews with several industry leaders, the view was expressed that Network Rail is only accountable to ORR and does not take the TOCs seriously enough as customers. They accept that longer franchises will not automatically lead to a better relationship between the TOC and Network Rail. A range of solutions were proposed, from changes in behaviours, through new licence conditions on Network Rail, transfer of operations and maintenance responsibilities from Network Rail to TOCs, through to a geographical break-up of the infrastructure company.

### **3 INTERNATIONAL CASE STUDIES**

#### **a. Sweden and Germany**

The organisation of the rail industry in both countries has evolved in similar ways with the vertical separation of train operation from a state-owned national infrastructure manager. Commercial passenger services (mostly intercity services) continue to be operated by the state-owned operator but non commercial services have been increasingly tendered on a competitive basis. One difference is that the main train operator and the infrastructure manager in Germany are in the same owning group (Deutsche Bahn AG) whereas in Sweden the two are separate organisations.

In both countries, the non-commercial services are generally tendered as local networks by regional passenger transport authorities (PTAs):

- Fourteen concessions are gross contract, three have revenue incentives and three are net cost contracts. Contract lengths vary from 3 to 9 years (plus options for extensions), although the trend is for longer terms. PTAs bear the risk of fuel price and salary rises. Some contracts are negotiated directly with Statens Järnvägars (SJ) rather than open competition. PTAs specify fares changes for gross cost contracts.

- In Germany 61% of contracts are net cost, 29% are gross cost and 10% have revenue incentives (a growing trend). Contract durations vary from 2 to 15 years, but most are for 10-15 years to be in line with leasing contracts for new rolling stock. PTAs again bear the risk of fuel price and salary rises. Specifications are generally tight so timetables can be co-ordinated across the network and for through ticketing with Deutsche Bahn (DB) fares. Some operators argue there is too much specification which stifles innovation and service improvements.

The impact of franchising the non-commercial rail services is generally considered to be positive. Although analysis is limited by the lack of available data, rail patronage has grown and operating costs have been reduced since franchising started.

In Sweden rolling stock for franchises is purchased, and owned by Transito AB, a jointly owned subsidiary of most PTAs. Government subsidised the purchase of new rolling stock from 2004 to 2007 to increase seat capacity by over 20% so reducing rolling stock age. Regional rail passenger kilometres grew by 4.6% p.a between 1990 and 2007. This was much higher than GDP (2.3%) or car vehicle kilometres (0.9%), which is a positive indication of the success of franchising non-commercial services. Alexandersson and Hulten (2007) find that competitive tendering has reduced public subsidy of the rail network in Sweden, with the first round of tendering producing savings of 20-30%. In a few cases the bid process has resulted in some unrealistically low contracts and business failures; for example, the bail out of SJ in 2003 (after the company under-bid to force out the competition) and private operator bankruptcies.

In Germany passenger km on regional services has grown by 43% between 1993/4 (before franchising started) and 2006. Part of the increase is due to the extra capacity paid for by the regional authorities, with train km increasing by 28% between 1993/4 and 2008. Nevertheless, there has not been a general increase in subsidies paid to operators and this has widely been viewed as a success. In Germany, most contracts specify high quality standards resulting in the need for new rolling stock. From 1994 to 2004 DB reduced the age of their rolling stock by 17.3 years to 7.5 years. Non-DB operators tend to lease from rolling stock companies although it is reported that suitable stock is not always available.

A review of approximately 60% of the contracts tendered for the first time has shown that savings of about 26% have been achieved against the unit costs of DB prior to the regionalisation of the services. This included some DB contracts, which shows that competitive pressure has led to DB offering lower prices in open tenders and direct contract awards (despite claiming higher costs; for example, due to higher pension costs).

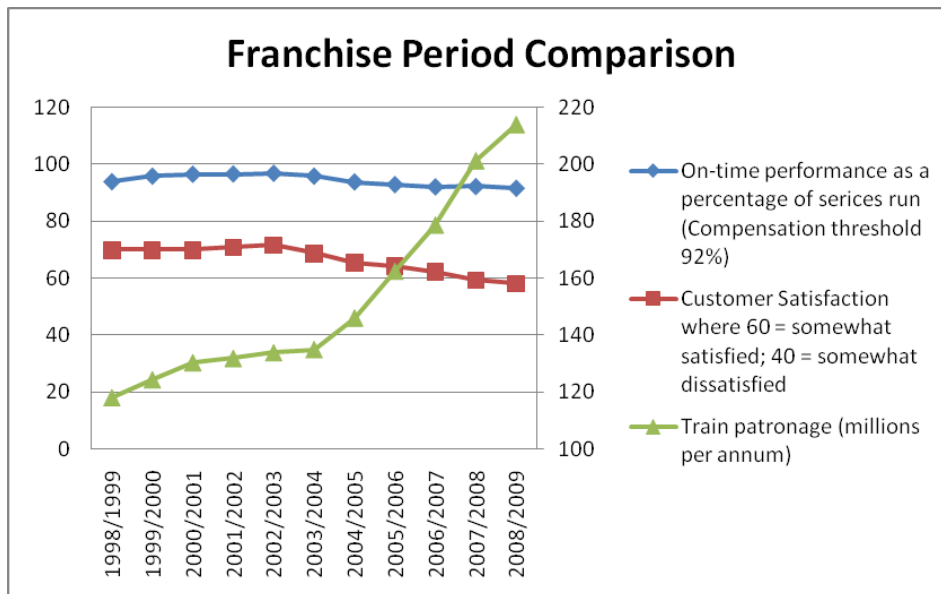
#### b. Melbourne

The Melbourne Metropolitan network carries over 200 million passenger trips annually. Trams are the second most used mode of public transport with 178m trips made annually. There have been three phases of private sector participation. The first set of franchises, awarded in 1999, were net cost contracts for 12-15 years. They were vertically integrated with franchisees leasing the infrastructure and being responsible for maintenance, renewal and enhancements, and taking control of the rolling stock. Operations were split into three rail and two tram franchises to create "competition by comparison". It was expected that this would reduce subsidy by Australian \$1.8bn, finance significant investment in new and refurbished rolling stock, and patronage would grow by 71% over 15 years.

However, by mid 2001 operators were expressing concerns about their financial position arising from a number of factors including ongoing problems with the automated ticketing systems, asset condition, and a new tax on fares that constrained revenue growth.

National Express declared its Australian operation bankrupt in 2002 and walked away from its three franchises. The government then re-nationalised V/line Passenger partly because they had just embarked on an enhancement programme and to rationalise the remaining metropolitan services into a combined rail franchise (operated by Connex) and a combined tram franchise (operated by Yarra trams). The Auditor-General's Report, Franchising Melbourne's train and tram system released in September 2005, concluded that this represented value for money, although it resulted in a big increase in costs.

The contracts to run the trains and trams have recently been retendered. The Franchise term is for an initial period of eight years, with possible extensions depending on meeting specified performance criteria.



Note – The left hand y-axis is percentage (for on-time performance and customer satisfaction) and the right hand axis is passengers (millions per annum).

**Figure 3: Performance of Melbourne franchises**

The figure above summarises some of the impacts of privatisation. Annual patronage has increased especially since June 2005. However, train punctuality and customer service have deteriorated due to rising demand causing network and station congestion, problems with fleet reliability and disruption caused by enhancement projects. Costs have also failed to fall. The new franchise agreements include a mechanism for handling change with a 'cap and collar' whereby the government share 50% of the upside benefit and 50% of downside risk above and below defined tolerances of the revenue forecast. At regular intervals of about three years the level of the revenue forecast is also reset to match actual revenue figures although the trend line remains the same.

c. Latin America

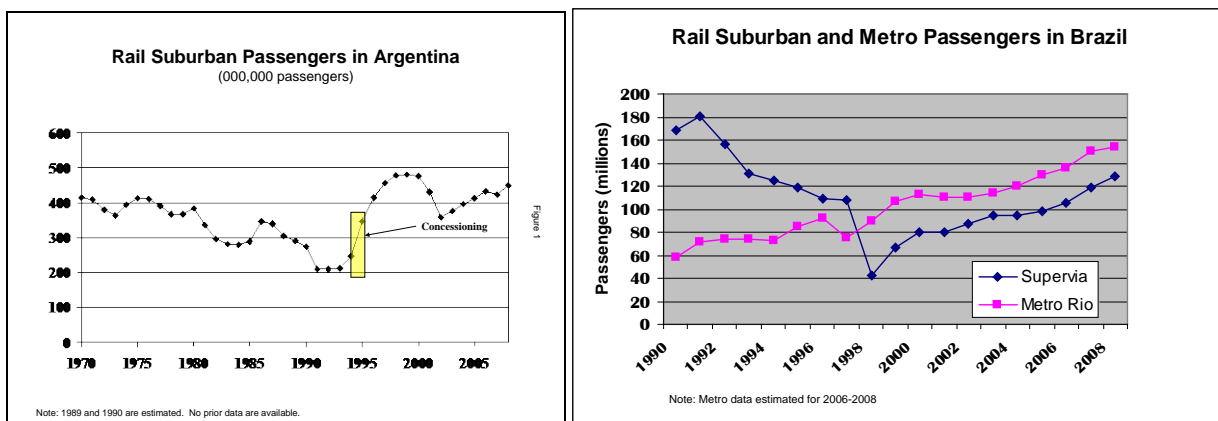
At the start of the 1990s, all major railways in Latin America were state-owned and state operated. All were losing large amounts of money, were in dilapidated condition, and had too many employees. As a last resort, governments chose to involve the private sector. By the end of the decade, all major freight railway and many passenger railways were either operated under concession by private companies or had been privatized.

In general, the initial approach to concessioning was the creation of net cost, exclusive, vertically integrated concessions with fare levels and level of service specified by the government, but with passenger demand forecasting and cost control the responsibility of the concession. The concessions also had full control over the size and wage costs of

their workforces. The concession periods were initially for 10-25 years. These were extended to 25-30 year periods to encourage concessionaires to finance new rolling stock. However, even with these lengths of concessions, private operators have been unable or unwilling to invest in the concession requirements for infrastructure and rolling stock renewal and modernisation. Governments have also failed to deliver their committed investment. This led to concession renegotiation.

Nevertheless, the impact of privatisation has been to stimulate growth in passenger demand. In Argentina, the Buenos Aires region experienced substantial growth in the years following the establishment of the concessions (Figure 4). This growth also reflected improved performance from the concessionaires' investment commitments. After 2000, demand experienced a sharp decline during the economic crisis. Also the government limited the concessionaires' scope for imposing fare increases and delayed support payments for investment which resulted in a loss of capacity and reduced quality of service. These factors resulted in government takeover of some of the concessions and a conversion of the remaining concessions into something resembling management contracts. Consequently contracts are now mostly gross cost. Demand is growing with the expansion of the Argentine economy.

In Brazil, the delay in the government providing infrastructure and rolling stock investment resulted in a fall in passenger demand and revenue for the suburban rail network concession (Supervia in Figure 4) principally because of a shortage of rolling stock. The concessionaire has survived as a result of the renegotiation of the contract. Unlike Buenos Aires, as costs have risen the concessionaire has been allowed to increase tariffs significantly in real terms.



**Figure 4: Rail demand in Argentina and Brazil**

In contrast, MetroRio has shown continual demand growth due to the effectiveness of the early maintenance programme and due to the government-financed programme of network expansion. The government has extended the concession by another 20 years from the initial date of expiry (until 2038) in recognition of the success of the concession management so far. In addition, the government has permitted the Metro to expand into the operation of bus services in order to connect the Metro to outlying areas.

Overall, given recent economic turbulence in Latin America, the concession experience has been successful where government has met its investment funding commitments. Demand has generally exceeded the growth in GDP and labour productivity has grown rapidly. Most concessions have been at least financially stable, some have been very successful and a few have failed and been reconstituted.

## 4 CONCLUSIONS

### a. Context

When comparing the effectiveness of private sector involvement in railways in different countries, it is vital to consider the context including geography, rail network shape, government policy and culture. Often this will mean that successes (or failures) in one country will not be repeated in another or at least, not without tailoring to that country's particular circumstances.

An obvious example is the success in some countries of reducing operating costs. In Sweden and Germany this has largely been achieved by giving the franchisees freedom to recruit staff on their own terms and conditions, aided by a long mobilisation period to recruit and train those staff. In Latin America the state effectively bought out staff not required by franchisees by offering redundancy payments, early retirement or retraining, in order to help the rail industry improve its efficiency. In Britain and Melbourne, however, the pay and conditions of staff were protected and this has made it much more difficult to achieve cost savings.

### b. Learning from Failures

It is clear that there have been failures in many countries examined. We have identified three causes:

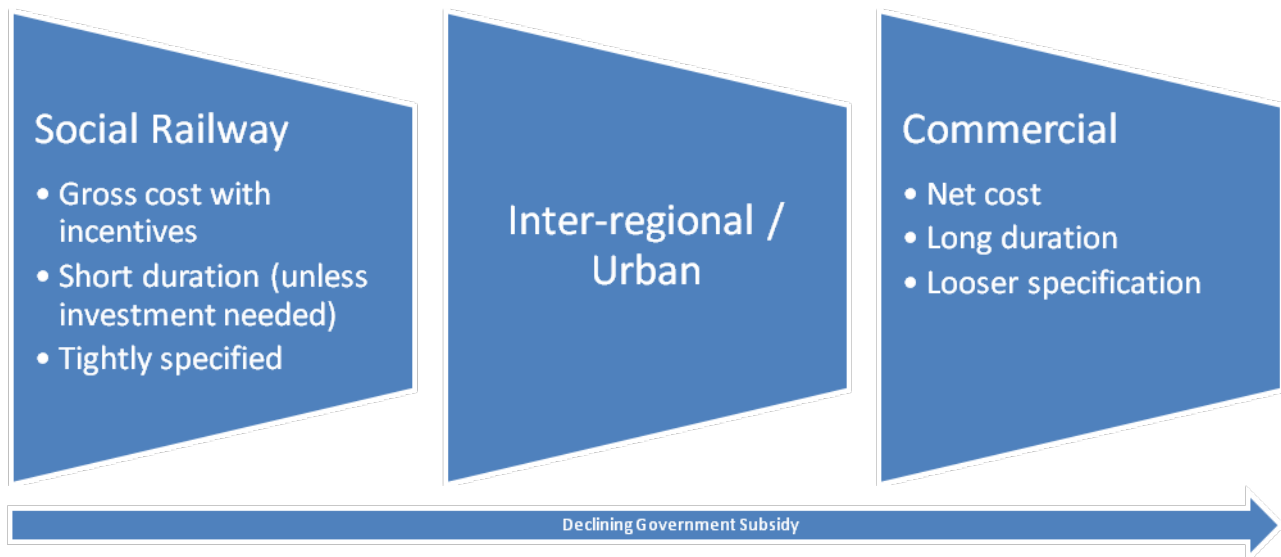
- Over-optimistic bidding in terms of both achievable cost savings and forecast demand.
- External events outside the control of the franchise (for example, imposition of network wide speed restrictions following the Hatfield disaster, additional tax imposed on fares in Melbourne, and the economic crisis in Latin America).
- Late or non-delivery of government-funded enhancements.

Some useful lessons can be learnt from these failures. There does not appear to be any particular auction method that is fool proof. Rather it is the way that risk and change is handled in the contract that appears to be more important. Getting this right should result in less extreme bids and help isolate the operator from events outside of its control. Many contracts have removed the risk of fuel price and salary increases which are instead borne by the tendering authority. It has also been suggested that there should be a link with changes to GDP which would provide some protection to changes to the economy whilst providing incentive to be more responsive to the market than a 'cap and collar' mechanism.

### c. Types of contract

There is no clear contract structure that works best in all cases (one size does not fit all). In our opinion generally the most suitable structure depends on market type as summarised in the figure below.





**Figure 5: Contract Options for Private Sector Participation in Rail**

Gross cost contracts with patronage and quality incentives appear to work best for social railways, where significant public subsidies are required. It provides focus on reducing operational costs. Specifications will need to be tight to make clear what the tendering authority wants to buy. Any changes can be negotiated relatively simply since the franchisee has limited exposure to ticket revenue. Contract lengths will tend to be short (about 5 years) to allow for regular competitive bidding. Longer durations might be more appropriate when the tendering authority specifies infrastructure or rolling stock upgrade requirements which the franchisee can help deliver, or to incentivise them to invest in small scale investments and receive some of the benefits of their operation such as Driver Only Operation or station improvements.

The tendering authorities are often regional bodies who are best placed to produce specifications that meet local requirements. However, it is important that they possess the necessary commercial skills because there have been instances of poor contracts being let when this was not the case.

The only evidence for franchising commercial railways is in Britain. Here the franchisee is much better placed to undertake the marketing and yield management to optimise revenue, and so net cost contracts are best suited to this type of franchise. Competitive pressure from other transport modes allows a looser specification in the contract so that the franchisee can react to market changes as well as providing the freedom to innovate.

There is an argument for longer franchise lengths (at least 10 years) to encourage investment in rolling stock and stations. Infrastructure enhancements can be delivered on a single user railway (such as Chilterns delivering Evergreen) but this will be more difficult on a multi-user railway when the infrastructure manager is likely to be better placed. Longer franchises also strengthen the incentives for operators to continue with the franchise through a downturn in order to recoup losses later on.

The social and commercial railways are two extremes and of course many inter-regional and commuter railways will lie between the two. There are instances of net cost, gross cost and gross cost with incentives for these, and so there is no clear best model. A judgement on the best type of contract will therefore need to be taken based on the particular circumstances and context.

#### d. Relationship with Infrastructure Manager

In Britain the view has been expressed that Network Rail does not treat the TOCs as valued customers, for example in specifying and delivering infrastructure enhancements. Interestingly, in Sweden and Germany there are also problems in this relationship but it does seem to work better. This may be because there is a long term partner in the state-run train company which also operates most of the trains. This stability might produce a better relationship, which suggests that longer franchises might help.

Vertical integration is another solution. It is easiest to deliver on a single user network, although its implementation needs careful monitoring to avoid the problems experienced in the initial franchise in Melbourne (for example responsibilities and plans for asset stewardship must be clear and based on robust asset knowledge). Longer contracts help to provide incentives for infrastructure investments, although the experience in Latin America was that extensions also had to be offered as continued incentive. However, vertical integration could increase barriers to entry and therefore reduce the extent of competition for the franchises, and also cause problems for open-access operators seeking access to the network in competition with the vertically-integrated incumbent.

#### e. Implications for Southern Africa

As Southern Africa begins to consider private sector participation in rail to bring essential investment in renewal and enhancement, and improve efficiency and service delivery, the papers indicates that there are a number of issues that governments and their contracting authorities will need to consider carefully. These include:

- Understanding the market being served by the railway in which private sector participation is sought so the appropriate contracting model is chosen. In South Africa, for example, gross cost contracts may be more important for the subsidised commuter railway than for Shosholozha Meyl where longer net cost contracts may be preferable.
- Being clear on the objectives of the process and the relative importance of the different objectives. For example, if the aim is to reduce costs and improve efficiency then a gross cost contracting model may be preferable. To secure investment, a net cost model with freedom to innovate may be more appropriate.
- Recognising the scope for innovation, particularly at the time of the first transaction to the private sector.
- Ensuring the risks are understood and any required government funding is committed, particularly for investment.
- Ensuring those letting and managing the contracts have appropriate commercial training.

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