Chapter 10

RAIL TRANSPORT IN NEW ZEALAND

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- Privatisation of track and operations in New Zealand's rail system had significant effects, including lower prices and higher volumes, improved productivity and better financial performance.
- Despite reforms, profits did not cover the cost of capital and debt was increasing, while track maintenance was falling: these were consequences of the underlying economics of rail and of the constraints imposed by the government. Eventually the track was returned to the government.
- Successful structural reforms require a solid understanding of the economics of rail, and the specific circumstances and history of an economy's transport system.

10.1 INTRODUCTION

'The railways in New Zealand have never been regarded, or run, as a profit-making concern', wrote New Zealand's Minister of Railways, Gordon Coates, in 1923. Even the most unprofitable branch lines and services had an intangible value, he said: 'They have opened up the economy, increased production and consequently the wealth of the Dominion' (Atkinson 2007 p. 60). For much of the 20th century, rail was regarded not only as core government business but also as an iconic part of New Zealand's journey to prosperity. Notions that the railways should cover costs or provide a return on the capital invested were anathema to policy makers and the public alike. To Minister Coates, running a railway solely on commercial grounds 'would not be utilising the service in the true interests of [New Zealand]'.

Those traditional assumptions were swept aside in the 1980s. Corporatisation was followed by deregulation, privatisation and then the separation of infrastructure from rail operations. But in 2008 rail became a government activity once more, with both the tracks and rail services owned and managed by the New Zealand Rail Corporation through its business arms, ONTRACK and KiwiRail. After more than 25 years of policy shifts and U-turns, rail in New Zealand today is still far from 'a profit-making concern' and the need for significant government subsidies remains. There are conflicting views on rail's potential to contribute to New Zealand's economic development and environmental goals. Debate continues over how best to fund and run a railway 'in the true interests' of New Zealand.

This case study describes the arrangements under which rail has operated in New Zealand, and explores the policies and political imperatives that drove them. Figure 10.1 summarises

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the changes in policy. How has rail performed under the various models? And, given its ongoing economic performance problems, where might the future of rail in New Zealand lie?

The next section includes some detail of the history of the development of the rail network up to the creation of corporate structure for the government-owned system in 1982. Those more interested in regulatory changes since then should turn to section 10.3.

10.2 A SHORT HISTORY OF NEW ZEALAND RAIL TO THE 1990s

10.2.1 Building the railway, building the nation: 1860 to the 1920s

Rail has been described as New Zealand's 'engine of colonisation' (Atkinson 2007 p. 22). Railways helped open up the economy's interior, linking new European settlements to ports, from the 1860s. The first railways were short lines built by provincial governments at considerable and usually very high cost. By 1880, with the economy's population still only 500 000, New Zealand had more than 1900km of track. Trains carried nearly 3 million passengers and 830 000 tons of freight a year (ONTRACK 2010).

The government's enthusiasm for railways continued well into the 20th century. While some had dreamed of a national trunk line, it was also considered vital to establish branch lines connecting rural areas – with their farms, dairy factories, meat works, mills and mines – to export ports. Passenger services between major urban centres expanded too, and some extraordinary feats of engineering saw the North Island main trunk line finished in 1908 (its South Island counterpart was completed in 1945). Between 1870 and 1929 tens of millions of pounds were spent on rail construction, representing 48% of the economy's Public Works Fund (Atkinson 2007 p. 57). By 1920 New Zealand Rail was carrying 28 million passengers and more than 6 million tons of freight.

10.2.2 The end of the golden age: 1930 to the 1990s

The rail network continued to expand, reaching its peak in 1952 at 5695km. However, it was not until 1962 – when rail ferries began sailing between the North and South Islands – that New Zealand had a fully integrated national rail network.

For much of the first part of the 20th century, rail remained a protected icon of national progress. Money was poured into enhancements – the transition from steam to diesel, the electrification of suburban lines, the introduction of railcars, the promotion of rail tourism – without any expectation that the costs would be recouped. Rail was effectively a public service, with the Railways Department New Zealand's largest employer. Yet even as the network was expanding, rail was losing its pre-eminence and by the 1920s increasing competition from road transport saw the start of the steady deterioration in rail's financial performance that has continued ever since (see Figure 10.2).

New Zealanders embraced the automobile early and enthusiastically, with ownership of cars more than doubling from 71 403 to 150 571 in the second half of the 1920s, by which time there was one car for every nine New Zealanders – one of the highest rates of automobile ownership in the world at that time (Atkinson 2007 p. 100). Passenger rail travel began to fall almost immediately (Figure 10.3).

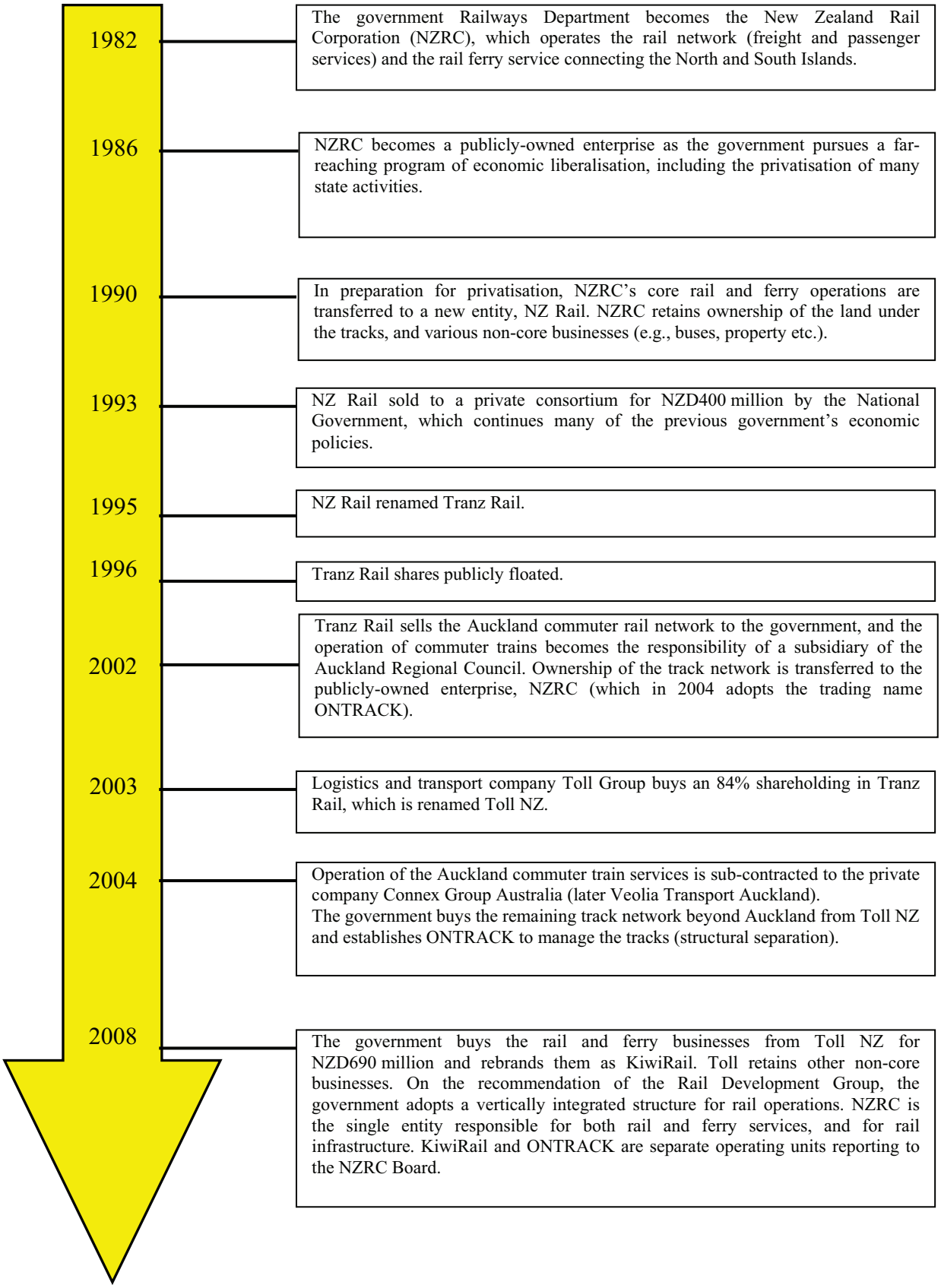

Figure 10.1: Milestones in the development of railways in New Zealand, 1982–2008.

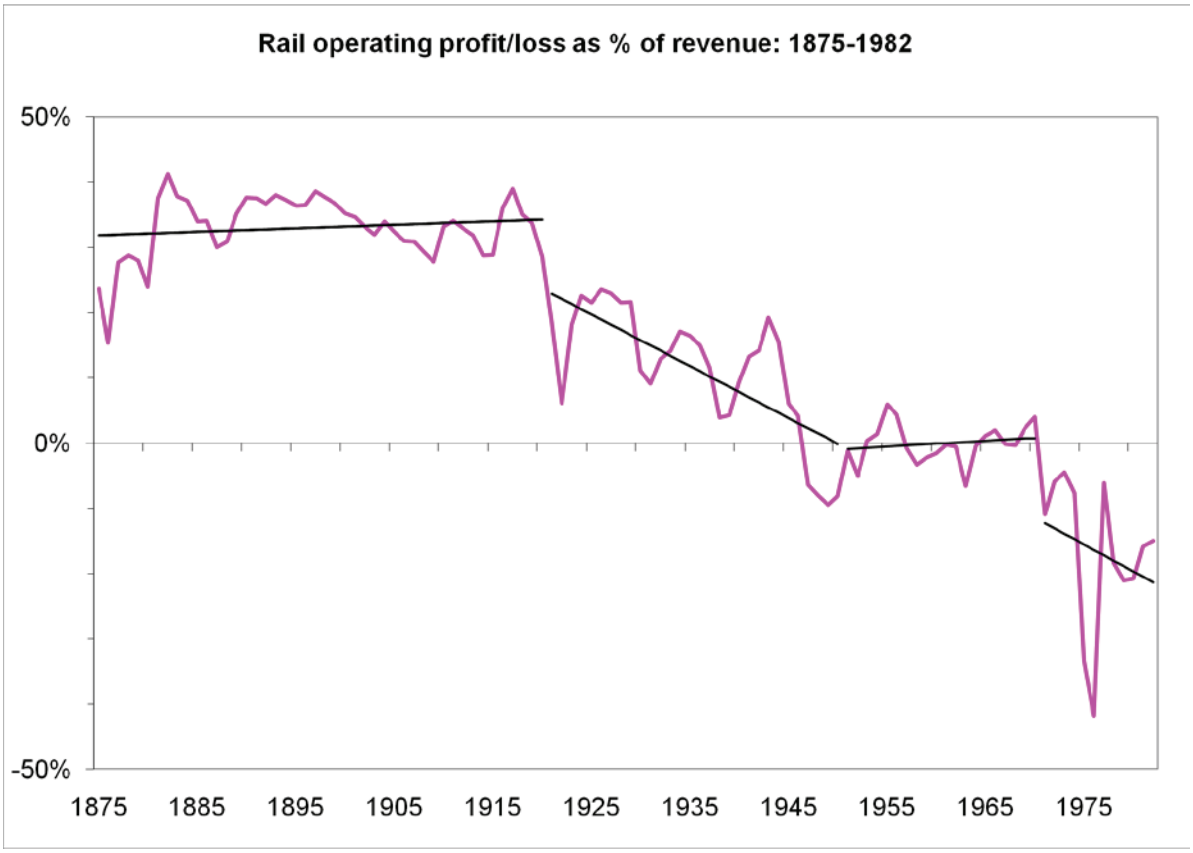

Figure 10.2: Rail operating profit/loss as a percentage of revenue, 1875–1982. (Source: Heatley 2009 p. 11)

For freight, the competition from trucks – whose greater flexibility and connectivity made them ideally suited to New Zealand's low freight volumes and sparse settlement patterns – represented a major threat. The government stepped in, offering generous freight concessions to ensure local producers used rail. Then, in 1936, legislation was introduced preventing trucks from carrying loads more than 30 miles (48km) and restricting new trucking operators to those that could prove a need for their services. The Railways Department expanded its Road Services Branch, which soon become one of the economy's largest bus operators (Atkinson 2007 p. 102).

Despite these interventions, rail's already poor financial performance continued to decline. After an upsurge due to fuel rationing during and after World War II (Dravitzki & Lester 2006 Fig. 3), passenger travel dropped dramatically, apart from some resurgence in urban commuter services for the new suburbs established post-war (see Figure 10.3). The option of travelling from Auckland to Wellington within an hour by air, rather than 10 hours by train, increasingly enticed long-distance travellers. Freight services continued to lose market share to road.

The Railways Department continued to struggle financially and its declining fortunes eventually prompted drastic measures. Closures of the least profitable branch lines and services, which had begun in the 1950s, accelerated. In 1982 the Railways Department was corporatised, becoming the New Zealand Railways Corporation. With a new focus on profit making, there were massive job losses – between 1982 and 1989 the workforce was cut by 54%. For a while rail's financial decline steadied. But like new technologies and regulatory protection previously, line closures and staff cuts were not enough to arrest the downward trend.

Figure 10.3: The decline in passenger rail travel. (Source: Atkinson 2007 pp. 101, 215)

In the 1980s the transport sector felt the full force of the Fourth Labour Government's deregulation program. The restriction on road freight movements (which had steadily increased from 48 to 150km) was phased out, and by 1986 road transport operators were no longer subject to the Ministry of Transport's qualitative licensing system. At the same time, the permitted size and weight of trucks were growing steadily. The combined impact was immediate and dramatic: rail lost one-third of its freight market share between 1980 and 1988 (ISCR 1999a p. 13), and greater competition saw freight haulage prices fall by 25% (McKinnon 1998 p. 213). If rail was to remain competitive, services and infrastructure (for both freight and passengers) needed modernising urgently.

All these factors, in conjunction with the reforming ideology of the times, drove the government's decision to sell rail to the private sector.

10.3 PRIVATISATION

Deregulation, privatisation, asset sales and subsidy removal were central planks of the radical economic program of the government which was elected in 1984. In its electoral term, a heavily-indebted, tightly-regulated economy that the new Prime Minister described as operating 'like a Polish shipyard' was transformed into a deregulated free market economy at a speed that astonished onlookers.

The privatisation mantra was continued by the new government that came to power in 1990. This new government saw selling government assets as a way to raise money while avoiding ongoing investment in them. In the case of rail, significant investment was urgently needed in both the track and rolling stock after years of cost cutting: who better to take on the task than the private sector? The same approach was applied to other areas previously seen as core government business. Telecommunications, electricity, the postal service and the national airline were all either privatised or became publicly-owned enterprises during this period. In New Zealand, a publicly-owned enterprise is a corporation whose shares are wholly owned by the government, and whose principal objective is to operate as a successful business. Each enterprise has an independent board and management, and their responsibilities (together with those of the shareholding Minister) are clearly delineated under the State Owned Enterprises Act 1986.

Preparations for selling New Zealand Rail began in 1990. In 1993 it was bought by a private consortium comprising Fay Richwhite and Company (local investment bankers), the Wisconsin Central Transportation Corporation and Berkshire Partners LLC. They paid NZD400 million, and renamed the business Tranz Rail.

A 'Core Lease' between the Crown and Tranz Rail gave the company an exclusive 40-year right (with a right of renewal for a further 40 years) to use the land under the current network for the purposes of running a railway. There was no access regime for potential competitors (excepting provisions for heritage operators). Presumably, by granting exclusive rights the government received a higher sale price at privatisation.

Following the decision to prepare rail for privatisation in 1989, a focused marketing effort led by non-rail staff brought in for that purpose segmented the freight market. This effort led to better understanding of customer needs and a customer-centric approach that recognised that Tranz Rail's freight business was dominated by a small number of customers transporting a very small number of commodities (ISCR 1999a pp. 32–4). Tranz Rail benefited from this market segmentation, improved understanding of customers and focus on marketing to their largest customers. Volumes for the bulk-goods segment increased by 5.5% per year over 1994–97 in response to price falls of 7% per year. The export-goods segment was more elastic, with volumes growing at 12% per year in response to price falls of 4.4% per year. The distribution (logistics) segment had small price and volume growth in response to an improved quality of service (ISCR 1999a p. 42).

It was not until 1996 that Tranz Rail sought to directly measure operational indicators that had been identified as important to service quality. The limited data available showed somewhat variable results through to 1997 (ISCR 1999a pp. 39–40). Significant improvements were reflected in customer satisfaction surveys conducted in 2000 and 2003, with positive responses to the question 'Would you recommend Tranz Rail to another potential customer?' increasing from just over 30% to nearly 80% (Tranz Rail Holdings Limited 2003).

Under private ownership Tranz Rail further improved productivity and returned the first operating profits for rail in many years. Costs were reduced, including by cutting uneconomic services. Freight volumes grew, peaking in 2000 (Figure 10.4), while rail's share of the land freight market peaked at 29% in 1998 (Richard Paling Consulting 2008 p. 4).

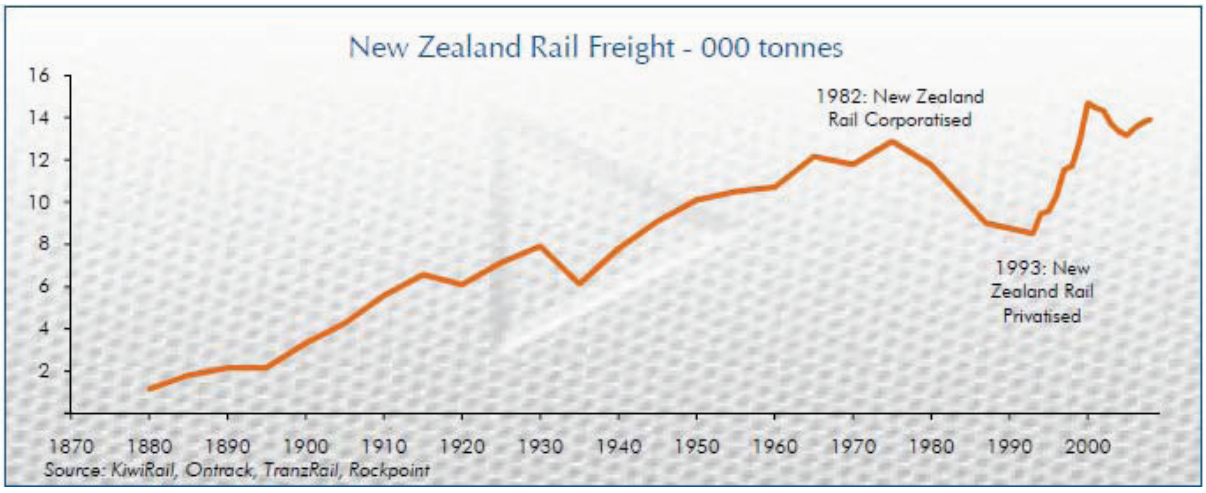

Figure 10.4: Rail freight in New Zealand from 1880. (Source: Rockpoint 2009 p. 103)

But Tranz Rail's debt levels were rising at the same time. Its profits were insufficient to cover the opportunity costs of capital (shown in Figure 10.5) and both the track and the rolling structure continued to suffer from insufficient investment in maintenance, renewal and upgrades (ONTRACK 2010; Heatley 2009 p. 35).

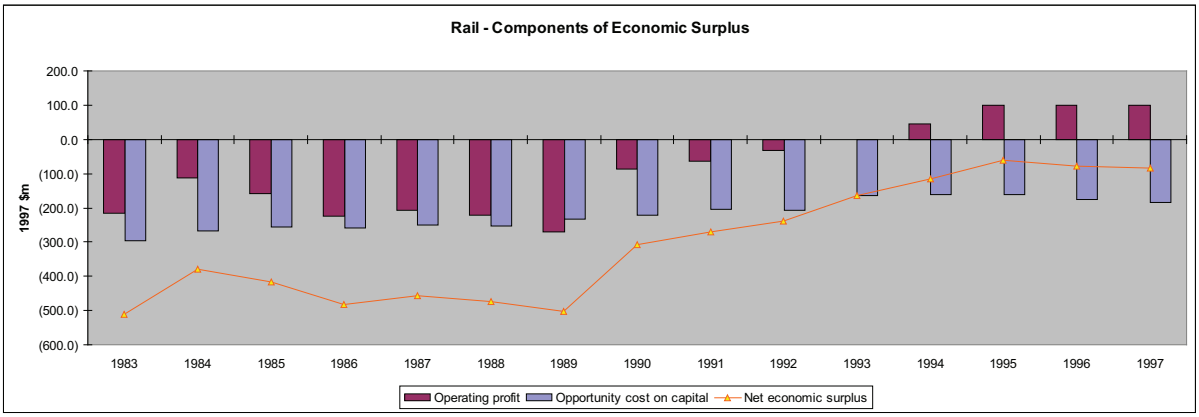

Figure 10.5: Tranz Rail's profit could not sustain its operations. (Source: Heatley 2009 p. 28)

Nor did Tranz Rail perform well for its shareholders. From a high point of NZD9/share in 1997, the value of Tranz Rail shares fell steeply to NZD0.39 in 2003. Those who had bought shares in the public float in 1996 and retained them through to 2003 got back only 28% of their original investment (although the original investors did very well indeed, realising a total of NZD470 million on their initial equity of NZD105 million when they sold their shares in 1997 – a transaction that subsequently became the focus of an insider-trading inquiry) (Gaynor 2008; Heatley 2009 p. 31).

At the time of privatisation, the government retained ownership of the land under the rail tracks, leasing it to Tranz Rail through the 'Core Lease'. Assuming that the initial objective of privatisation was greater economic efficiency, the Core Lease arrangement worked to undermine it. If a line was not economic, the rail operator was unable to make the economically rational decision to sell the land for a more productive use. This suggests that, although the government had at one level embraced the new era of privatisation, it was reluctant to abandon rail to market forces entirely. This became even clearer in 2002, when Tranz Rail indicated it wanted to close 41% of the lines, deeming them uneconomic (RDG 2008a; Heatley 2009 p. 46). Faced with this politically unpalatable prospect, and with real concerns about the impact of under-investment in the network, the government (Labour-led once more) sought a way to maintain a national railway that met its political, economic and social goals.

What went wrong with privatisation? One problem was the assumption that – despite rail's history – simply changing the ownership model would 'fix' the underlying economics of rail in New Zealand (Box 10.1). Secondly, the government's willingness to intervene when the owners sought to rationalise services and close unprofitable lines demonstrated that it still wanted substantial control over rail. Not only did this create difficulties at the time, but it is also likely to have long-term ramifications: any future government wishing to pursue privatisation may find it cannot credibly commit to non-interference (Heatley 2009 p. 46).

Box 10.1: Constrained by geography and population.

New Zealand – population 4.3 million[3] – is an economy comprising two narrow, mountainous main islands, whose nearest neighbour is 1500km away. These facts place certain inescapable limits on rail operations and have dictated some significant decisions. For example, the economy's challenging topography was instrumental in the early choice of narrow-gauge tracks, which were cheaper to build in mountainous terrain (Japan, Indonesia and Australia's Tasmania chose the same option for similar reasons). Unfortunately, this decision placed technological and commercial constraints on rail's development which took decades to overcome (Leitch & Stott p. 5).

More insurmountable have been the problems caused by New Zealand's low population density (16 people/km^2). This has made it impossible to achieve the 'economies of density' essential for successful rail services – in other words, there is insufficient population to justify running more trains on existing tracks (The Treasury 2009 p. 25). Frequent, high-speed passenger trains may be viable in similarly-sized island nations such as the United Kingdom and Japan, but those economies' population density is far greater, at 338 and 251 people/km^2 respectively.[4] New Zealand's low urban population density and a trend to dispersed employment have also contributed to the demise of commuter rail services in all but two cities, Auckland and Wellington. Thus, in New Zealand today, freight, and not passengers, is the lifeblood of rail.

The viability of freight services, too, is constrained by physical factors. The fact that the railways still follow routes mapped out more than 100 years ago, often through difficult terrain, means freight may have to travel more slowly and over longer distances to reach the same destinations served by roads. Rail's competitiveness is also constrained by the low volume of bulk freight and the short distances it is carried, relative to international standards. For the past 30 years, the average freight journey has been just under 300km, well below the distance at which rail is found to be competitive internationally for all but point-to-point transport of bulk commodities (Heatley 2009 p. 25). New Zealand's lack of borders, and the obvious inability to connect with other economies' rail networks, is an important factor here. In combination with the low population and other factors, it means New Zealand's rail freight density – calculated as the average number of tonnes of freight transported per kilometre of track – is very low by international standards (Figure 10.6).

Despite all these constraints and their impact on rail's economic performance, the size of New Zealand's rail network in 2010 (4000km) remains unchanged from 1991.

[3] As at 30 September 2009. (Source: Statistics New Zealand, http://www.stats.govt.nz.top-statistics.aspx).

[4] Population density statistics are based on 2007 data. (Source: United Nations Statistics Division, http://unstats.un.org/unsd/demographic/products/dyb/dyb2007.htm).

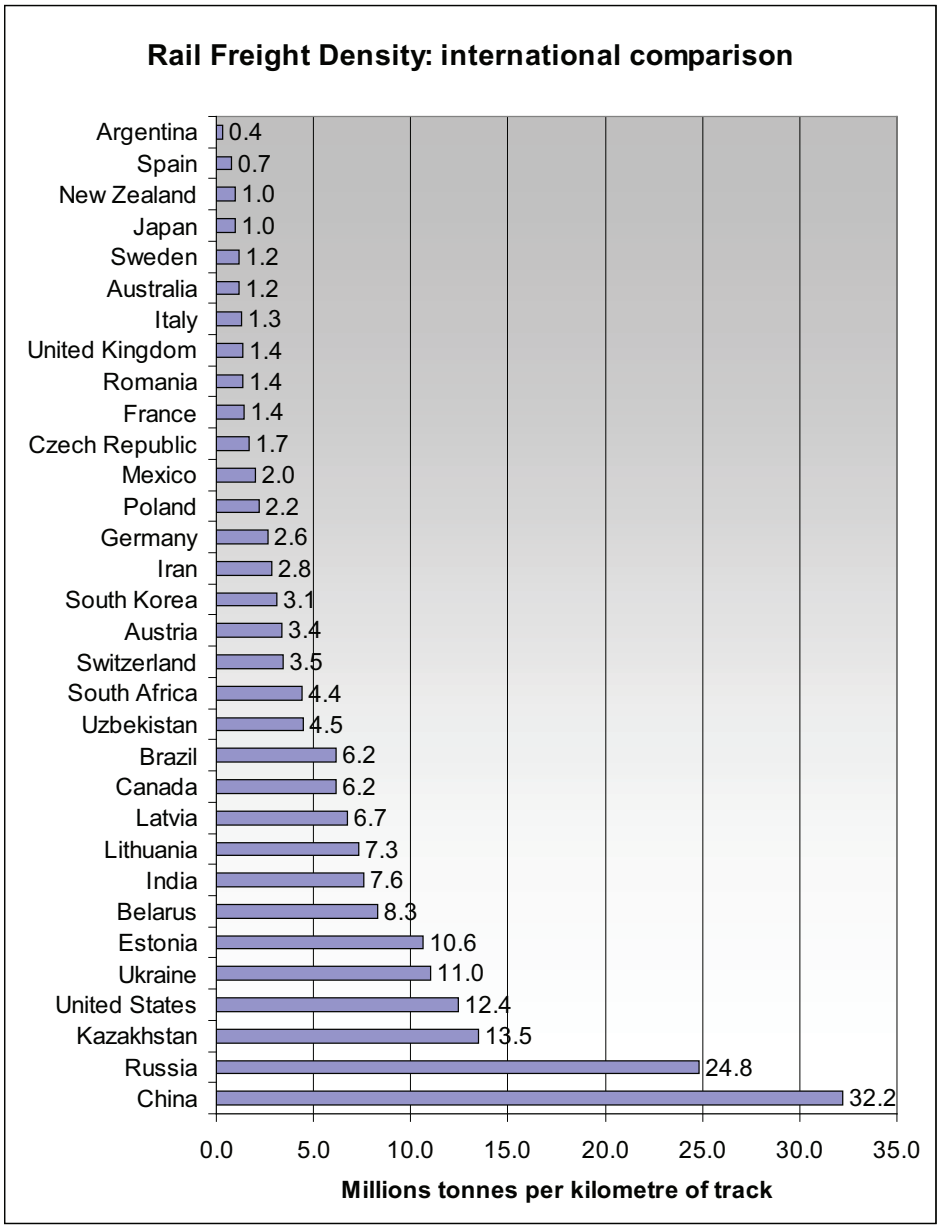

Figure 10.6: A comparison of rail freight density internationally. (Source: Heatley 2009 p. 21)

10.4 THE GOVERNMENT RETURNS TO RAIL

The government's return to the rail business began with its purchase of the Auckland suburban rail network from Tranz Rail in 2002. The Auckland Regional Council's transport agency, the Auckland Regional Transport Authority, became responsible for services (which were later contracted out to Veolia Transport: see Section 10.5.2). In 2003 the government began discussing the possibility of buying a stake in Tranz Rail, but this stalled when Australian transport and logistics company Toll Group moved to take over Tranz Rail.

Toll Group saw Tranz Rail as complementing its New Zealand activities, and considered that it could operate the business profitably (ONTRACK 2010; Toll Holdings Ltd 2004; Toll Group 2003). In 2003 it bought an 84% stake in Tranz Rail at NZD1.05/share (valuing Tranz Rail at NZD232 million) and renamed the business 'Toll NZ'. A year later the government struck a deal with Toll, buying the whole track network for NZD1. It was to be managed by ONTRACK, a business unit formed as part of the New Zealand Railways Corporation

(NZRC). It could be argued that Toll had thus secured itself an attractive deal: it had bought into rail relatively cheaply and retained the only part of the business that was ever likely to be profitable, while the intrinsically loss-making part (the track network) was now the government's responsibility.

This observation may seem counter-intuitive: a track network with its high fixed and sunk costs seems a promising candidate for a natural monopoly, and the opportunity to earn monopoly rents. However, the allocation of rents is only pertinent if there are rents to be allocated. As argued in this chapter, New Zealand rail (as a whole) is uneconomic relative to its competition; therefore there is no natural monopoly.

Under its agreement with Toll NZ, the government committed to spending NZD200 million on network upgrades and renewal. For its part, Toll NZ would spend NZD100 million on new rolling stock, and pay the government an annual track charge for exclusive access to the rail network. These access rights were subject to a 'use-it-or-lose-it' provision: if Toll NZ's traffic fell below 70% of average freight levels for 2002–04 on any line segment, it would no longer have exclusive rights to that segment (The Treasury 2004 p. 12). It must be considered very unlikely that this provision would have led to the appearance of a serious above-rail competitor to Toll, as the competitor's operations would have been restricted to those isolated line segments where there was declining demand for rail freight (Heatley 2009, p. 47). In any case there was no competitive entry between 2004 and 2008, when the agreement was effectively cancelled.

The access charge became a serious sticking point over the next few years. When the government sought to raise the charge to help fund upgrades, Toll NZ argued that this would lead to substantial losses unless freight prices were increased – and this would inevitably mean losing customers to road transport. Nonetheless, Toll NZ said in October 2007 that it remained 'absolutely committed to rail in New Zealand and freight was increasing on a number of its services' (*Sydney Morning Herald* 2007).

In the access charge negotiations between Toll and the government, both parties were in the position to 'hold up' the other and extract a 'profit' at the expense of a larger loss incurred by the other party.[5] Both the track (an exclusive sunk investment) and operations (with exclusive access conferred by contract) could be considered as 'bottleneck facilities', relative to each other. (But this does not make them bottleneck facilities in the economy as a whole – for that to be the case there would need to be a lack of close substitutes for the services offered by those facilities.)

The question was: 'Who had the greater bargaining power in the negotiations?'.

Toll had a credible threat: to withdraw selected services from rail and shift their operations to road and/or sea transport. This threat was credible because they had an existing road and sea transport business, and their shareholders would demand that Toll exit any business in which there was no reasonable prospect of earning an economic profit. Withdrawal of services would create a political cost for the government, which had made explicit policy commitments to invest in rail infrastructure and to move an increasing share of freight from road to rail.

[5] The 'hold up problem' in economics is that a party that has a relationship-specific investment is vulnerable to a threat by other parties to terminate that relationship. The threat enables these parties to obtain better terms than initially agreed (Milgrom & Roberts 1992).

But the government lacked any credible threats against Toll. They were contractually committed to maintain or improve the rail infrastructure (The Treasury 2004 p. 20). If Toll withdrew services, the contract allowed for a new rail operator to take over those services. While a lack of scale would mean that the new operator would likely face a higher cost structure than Toll, the contract meant that the terms for new entrants (including access charges) could be no more favourable than those faced by Toll (The Treasury 2004 p. 14). The putative entrant, with higher costs, would have little chance of earning a profit on a service that Toll decided to exit because it was uneconomic. Hence, there was no credible threat of entry.

Thus, the 2004 agreement had left Toll with substantially greater bargaining power. The government's frustration at Toll's exercising this power (combined with some unrealistic ideas about the potential of rail) led it to buy out the rail operator on terms very favourable to Toll. However, the costs of resolving this bargaining problem (to date over NZD1 billion) have exceeded the costs of living with it (perhaps an access charge subsidy of NZD70 million per year[6]).

In this instance, the contractual allocation of rights determined the locus of the bargaining power. With hindsight, other strategies may have been more successful in 2003–04, for example:

- encouraging the rail operator to withdraw from uneconomic services (in order to ensure the operator's ongoing viability);
- making an equity injection into the integrated rail operator (so that the government and private shareholders faced the same incentives);
- purchasing the distressed integrated rail operator at a bargain market price before (or in competition with) the takeover offer from Toll; and
- letting the rail operator fail, cancelling the exclusive access rights and introducing a new ownership and access model (e.g., one with sections of track owned by major users or port operators and cross-licensing arrangements for access).

In May 2008 the government moved to purchase the rail (and inter-island ferry) business from a reluctant Toll NZ, citing the impasse over the access charge. The change of ownership came into effect in July 2008, with the government rebranding the rail business 'KiwiRail'. Like ONTRACK, KiwiRail was a business arm of the New Zealand Railways Corporation and reported to the NZRC Board. In principle, there were still no barriers to competition within rail. Under the Railways Act 2005, any operator who met safety-related licence conditions could start running a rail service – providing they could negotiate access to the ONTRACK rail network. Toll NZ retained its road transport and logistics arm, Toll TranzLink, which became New Zealand's largest road freight operator.

Despite the public battles over the track access charge, the government's buy-back of rail was primarily driven by ideology. This expressed the government's belief that a strong rail network was essential to New Zealand's future economic and environmental performance. With freight volumes forecast to rise by 75% over the next 25 years, rail had a significant economic role to play. It was essential for regional development, and for New Zealand's vital export industries that benefited from rail's ability to carry large volumes of bulk commodities (such as coal and dairy products) comparatively cheaply (Cullen 2008a). The government also argued that the purchase was integral to the development of a more environmentally

[6] http://www.treasury.govt.nz/publications/informationreleases/rail/purchase/pdfs/rp-tsy-em-4dec06.pdf.

sustainable and integrated transport system. But even more fundamentally, the purchase confirmed the government's view that, if it was going to have to subsidise the rail network – which rail's performance under successive ownership structures had shown to be inevitable – it was preferable to subsidise a government-owned enterprise, rather than a foreign-owned private company. The Deputy Prime Minister of the time said that his government would not allow 'New Zealand taxpayers [to] indefinitely subsidise a private, foreign operation and then not make sure that the investment would deliver social and economic returns for New Zealand' (Cullen 2008b).

There was considerable criticism of the price that taxpayers paid for the railways. At NZD690 million, even the government admitted it had paid 'a premium price' (Young 2008). However, the government said that the price reflected the need to buy Toll out of its long-term monopoly rights (Bridgman 2008). It was also argued that the buy-out was preferable to the alternatives: 'continuing to subsidise a foreign-owned company failing to invest sufficiently in basic infrastructure, increased expenditure required on roading, increased accidents on the road, and increased greenhouse gas emissions at a direct cost to the taxpayer' (Young 2008).

The government made an immediate commitment to investment. In July 2008 it appointed a Rail Development Group (RDG) to make recommendations about rail's future. The RDG confirmed that deferred capital expenditure was a pressing issue, but said that remedying this would go only some way towards making rail commercially viable without government subsidy (RDG 2008b p. 6). It called for more than NZD1 billion to be spent over 5 years on replacing locomotives, rehabilitating key sections of the network, upgrading information technology and creating freight hubs. As a first step, in October 2008 the government announced an injection of NZD121 million for rail industry improvements in the current fiscal year, in addition to previously forecast spending (Cullen 2008c).

The next month, there was a change of government. The new government had already pledged not to sell any government assets in its first term, so government ownership of rail for the next 3 years at least was guaranteed. The government stressed there was now a strong expectation that the rail network should deliver 'a commercial rate of return. Any taxpayer subsidies to the freight side of the business should be provided transparently and should not be at the expense of other transport modes' (Joyce 2009a).

After its first year back in government ownership, rail's economic performance problems remain. KiwiRail made a loss of NZD187 million in 2008/09, largely due to depreciation expenses on network assets (KiwiRail 2009 p. 76). The total government funding of NZD425 million almost exceeded operating revenue of NZD518 million.

10.5 REGULATION, COMPETITION AND STRUCTURAL REFORM

10.5.1 Minimal regulation

The 1980s New Zealand model of structural reform has been labelled 'light-handed regulation' (Evans et al. 1996 p. 1885). It sought to minimise government and regulatory intervention and to place reliance on actual and potential competition for the regulation of prices and monopoly behaviour.

When the New Zealand Railways Corporation became a government-owned corporation in the 1980s and was subsequently privatised, a raft of regulations was discarded, including, most importantly, the regulatory restrictions on road transport first introduced in 1936 to

allow rail to remain competitive. As already noted, deregulation had a major impact on the business, with rail losing one-third of its share of the freight market between 1980 and 1988. Today there is only minimal regulation of the sector and it focuses almost entirely on safety. The sector regulator is the Rail Regulation Section of the New Zealand Transport Agency, the government agency responsible for planning and funding land transport. Its rail-related responsibilities are confined to administering the Railways Act 2005, monitoring accidents, and licensing organisations that control and use rail networks. Licences are granted to rail providers and operators that meet specified safety standards.

Rail is also affected by the provisions of the Resource Management Act 1991, the principal legislation dealing with the use of the natural environment and its resources. Under the Act, rail operators wanting to build or expand infrastructure need to embark on planning and resource consent processes that can be both costly and time consuming.

The largely 'hands-off' approach to rail regulation reflects the present government's thinking about infrastructure regulation in general. A recent Treasury paper described the objective of regulation as 'to ensure sufficient certainty and consistency for business to operate competitively and with confidence, and with minimum transaction costs'. It also expressed concern that the costs of compliance may be contributing to New Zealand's relatively low productivity performance: it ranks 22nd of 30 OECD economies (The Treasury 2009 p. 95).

10.5.2 No barriers to entry

As described above, under the Railways Act 2005 any operator who meets safety-related licence conditions can start a rail service when they negotiate access to the ONTRACK rail network. The real competition lies with those other transport modes that manage to respond to changes and challenges more rapidly than rail – with its high fixed costs and 'sunk' assets – has been able to. Most rail costs (e.g., the cost of providing tracks or signalling equipment) are fixed: they do not change depending on the volume of freight or passengers. In addition, rail infrastructure is a very long-lived asset that gets more expensive to maintain and renew as it ages. Most of New Zealand's fixed rail assets are sunk: the value of tunnels, bridges etc. cannot be recovered if they are no longer used for railways (Heatley 2009 p. 20).

In practice, KiwiRail has no competitors in either the rail freight or long-distance passenger rail markets. Nor is there much likelihood of competitors emerging, given rail's perennial lack of profitability and KiwiRail's ability to access government financial support. The only scenario a potential new entrant might consider would be to service a profitable subset of routes or customers. KiwiRail could be expected to oppose such competitive entry vigorously, as the company relies on its profitable routes to cross-subsidise its less profitable ones, and its integration with ONTRACK gives it substantial power to exclude rail competitors.

Recent overseas trends towards supply-chain integration have seen port operators taking control over their supply chains by purchasing the rail networks servicing their hinterlands (e.g., in Europe: Notteboom 2008). Similarly, some large exporters (such as Australian mining companies) own the railways that connect their operations to ports. Such arrangements are unlikely to arise in New Zealand, as both major political parties appear committed to a national rail network with a single owner.

Urban commuter rail is in a slightly different situation. In 2004 services in Auckland were contracted out via competitive tender. The successful tenderer was the French-owned multinational Veolia Environment (Box 10.2).

Box 10.2: Competition for Auckland Commuter Rail Services.

When the Auckland Regional Council (ARC) called for tenders for the operation of Auckland's commuter rail system in 2002, Tranz Rail chose not to tender. Instead, it sold the Auckland metropolitan rail network to the Crown for NZD81 million. In November 2003 the successful tenderer was announced: Connex Group Australia (now know as Veolia Transport Auckland, part of the French multinational Veolia Environment). Connex was one of three tenderers; the British firms Serco and Stagecoach were unsuccessful.[7] Connex took over operation of the trains from July 2004.

In parallel with these changes the ARC moved to consolidate passenger transport planning, asset management and service delivery in one organisation. ARC formed the Auckland Regional Transport Authority (ARTA) in 2004 to own stations and passenger trains and take responsibility for service planning. Under the contract terms, Veolia receives payment for its costs plus a management fee. All fare revenue goes directly to ARTA.

Ownership of the track network and responsibility for signals and corridor infrastructure was transferred to the publicly-owned enterprise NZRC, which adopted the trading name ONTRACK.

As a result of the new public–private partnership structure, substantial investment in new infrastructure and fare subsidies, train patronage in Auckland doubled between 2005 and 2010 (Figure 10.7).[8] ARTA attributes the increase in patronage to the following changes:

More trains, more often. With the double tracking of the Western Line almost complete, trains run every 15 minutes at peak times, and five to six trains an hour run at peak times on the Southern and Eastern lines. Services increased from 635 per week in 2005 to 1475 in 2009 with 49 carriages added to the network.

More punctual. In March 2005 only 76.6% of trains arrived on time. This figure steadied at over 85% for most of 2009.

Better stations, better trains. 21 of the 41 stations on the network have been upgraded over 5 years. Six train carriages have been fitted this year with new seating, carpet and upgraded air conditioning (Auckland Regional Transport Authority 2009 p. 1).

The doubling in passenger numbers, however, came from a very low base. While rail now services 12.5% of public transport trips in Auckland, passenger transport is still dominated by the use of private vehicles.

The fare subsidies required to reach this level of patronage are significant: rail requires a NZD7–8 operating subsidy/passenger trip (Auckland Regional Transport Authority 2006 p. 26). These subsidies do not include a contribution to capital costs. Fares have recently been raised after a significant period in which they were held constant in order to attract patronage.

The structural split between ONTRACK and ARTA has created integration issues (Mein 2008) and continuing disputes between central and local government about who pays for rail. Transport Minister Stephen Joyce recently summed up the situation neatly: 'everybody loves [rail], but nobody wants to pay'.[9]

Central government has committed to an NZD1.6 billion upgrade of Auckland's commuter rail system, including electrification of the network at a cost of NZD1 billion. ARTA expects these upgrades to enable it to provide fast, reliable journeys at 10-minute frequencies and attract 15.7 million passengers to rail by 2016. ARTA's modelling suggests that at this level of patronage the operating subsidy per passenger can be reduced to NZD4 per passenger trip (Auckland Regional Transport Authority 2006).

[7] http://tvnz.co.nz/content/238981.
[8] http://www.arta.co.nz/newsroom/media-releases.html?releaseid=dfdd9285-5056-a41f-9226-f3c70938762c.
[9] http://www.guide2.co.nz/politics/news/councils-need-to-pay-for-regional-rail-use-minister/11/15796.

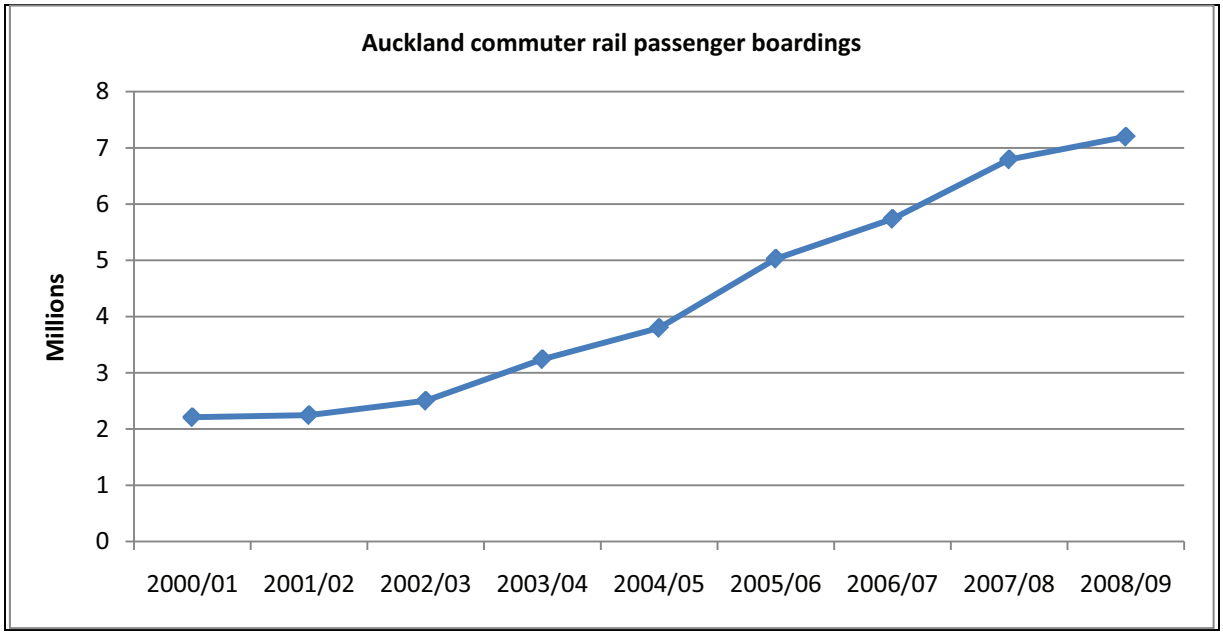

Figure 10.7: Growth in Auckland passenger rail. (Source: Ministry of Transport[10])

Commuter services in Wellington, currently owned and operated by KiwiRail under contract to the Wellington Regional Council, are expected to be similarly tendered out in 2016.[11] Assuming the successful tenderer is a new entrant to the market, the total number of significant rail operators will climb to four. The three current operators are KiwiRail, Veolia Transport and Taieri Gorge Railway Ltd. Taieri Gorge Railway is the largest of the economy's 60 heritage rail operators (the others are mainly small, non-profit organisations).

10.5.3 Structural integration favoured

For much of its history New Zealand rail has been structurally integrated, with a single organisation responsible for both infrastructure and rail services. There was, however, a period of structural separation from 2004 to 2008 when ONTRACK was responsible for below-rail infrastructure and Tranz Rail provided above-rail services. 'Below-rail' in this context means the non-moving parts of the rail network, including the rails themselves.

Elsewhere in the world, structural separation has often been introduced to enhance competition. However, results have been mixed, with some economies (such as the United States) reporting a reduction in efficiency (Heatley 2009 p. 46). But in New Zealand the case for structural separation was made for somewhat different reasons. It arose at a time when the private rail operator, Toll NZ, was seeking government subsidies in order to maintain the national network. Rather than continuing to make direct subsidies, the government elected instead to create ONTRACK as a separate entity with which Toll would negotiate a track access agreement. As Nick Wills-Johnson (2007 p. 2) has argued in relation to Australia, 'by investing in the below-rail infrastructure only, government can [ensure] that its investment is not affected by future inefficiencies elsewhere in the railway, or even by the railway operation becoming insolvent'. For the New Zealand government, then, structural separation was a less risky (and perhaps more politically acceptable) way of investing in rail.

[10] http://www.transport.govt.nz/ourwork/TMIF/Pages/TV020.aspx accessed 3 May 2010.
[11] http://www.transport.govt.nz/ourwork/rail/Documents/Metro%20rail%20Oct%2009.pdf.

In the event, information-sharing difficulties soon arose between ONTRACK and Toll. For example, the former needed accurate forecasts of future freight volumes in order to plan its capital works program. But was supplying such information in Toll's interests when ONTRACK might have used it to justify a higher track access charge? Impasses such as this contributed to the return to vertical integration in 2008.

10.6 THE GAP TO BEST PRACTICE IN STRUCTURAL REFORM

The current government favours minimal regulatory intervention, and has a review program in place to identify and remove 'unnecessary and superfluous regulation'.[12] Government ownership of transport infrastructure should be the exception rather than the norm, as evidenced by the following policy:

> All things being equal, the Government will favour the distributed decision-making power of a competitive market for the provision of infrastructure. This is because the commercial disciplines that come from investors risking their own money are difficult to replicate in the public sector. However, the Government does have a role providing goods and services where:
> - the goods and services have the characteristics of being 'public goods' in the technical sense;
> - the service is a monopoly and there are advantages in regulating through direct ownership rather than through the Commerce Act or other regulatory vehicle; or
> - distributional and equity objectives are better achieved through in-kind provision than through income support. (The Treasury 2010 p. 25)

It would be hard to argue that railway freight and long-distance passenger services meet these criteria. Urban passenger rail may meet the criteria insofar as it can deliver public goods such as reductions in urban road congestion. There is little doubt that the current government would prefer rail to be privately owned, but they are constrained by their own pre-election policy commitments and a general public distrust of privatisation. There is a substantial gap between the current situation and one that harnesses the 'distributed decision-making power of a competitive market'. The cost of this gap is difficult to establish. The direct costs of current policy to the taxpayer are measurable: they are the ongoing operational and capital subsidies to rail. Indirect costs include the opportunity costs of the land and other assets currently allocated to rail but potentially not being used for their most productive purpose in the economy. For example, the government is earning a zero financial return on the approximately NZD6 billion of land under the rail network.

As rail is generally a price taker in a competitive freight market, it is unlikely that the current policy has a significant impact on freight prices. However, ongoing public ownership and subsidy of rail is restraining private investment in other transport modes, particularly in coastal shipping (Rockpoint 2009 p. 219). Distorted investment signals can be expected to lead to the creation or maintenance of an economically inefficient freight transport network with higher average prices over time.

As noted, under present circumstances, competition within the rail sector is unlikely to emerge. Close substitutes exist for almost all of the freight products offered by New Zealand railways (Mackie, Baas & Manz 2006 p. 2). Rail faces substantial competition from both road and coastal shipping, and entry barriers in these sectors have been low in New Zealand since the 1980s (ISCR 1999a pp. 15, 28). Competition in rail's product markets (and threats of further entry there) should be sufficient to ameliorate monopoly power and drive efficiency gains.

[12].http://www.treasury.govt.nz/economy/regulation/statement/govt-stmt-reg.pdf.

While the current arrangements are technically an open-access regime, entry is unlikely: the rail operator is in government ownership, rail freight is unprofitable, the operator is subsidised and the government is unable to credibly commit to future non-interference in the sector. These problems would need to be overcome before access regime changes had any material effect in the sector. Moreover, reforms designed to foster competition within the rail sector (e.g., structural separation and improved access regimes) would lack credibility given the government-owned and funded incumbent, and likely involve significant costs for little benefit.

10.7 WHERE TO NOW FOR RAIL IN NEW ZEALAND?

10.7.1 Drivers for reform

From the government's perspective, the key drivers for change appear to be:

- a wish not to be seen as supporting rail over other transport modes, and hence unwillingness to continue subsidising unprofitable services;
- the need for significant investment in rail infrastructure;
- an expectation that further investment in KiwiRail will enable it to generate enough additional income to eventually meet its own renewal and capital development costs;
- a wish to be seen to be actively addressing road congestion in Auckland;
- a tight fiscal situation following the global financial crisis and recession in New Zealand; and
- competitive and political pressure from the road transport and coastal shipping sectors, requiring rail to be more narrowly focused on providing services only where it has a competitive advantage.

10.7.2 Barriers to reform

Major barriers to change include:

- a pre-election commitment to retaining KiwiRail in public ownership (at least for the current parliamentary term);
- a public perception that New Zealand went too far with structural reform in the 1980s and 1990s;
- ongoing operational and capital subsidies which reduce the incentives for efficiency improvements and structural change; and
- the risk of policy capture by the incumbent publicly-owned firm, which faces the weak market discipline inherent in a corporatised structure.

There is a strongly held public perception that the rail network was run down by its private owners and that this situation has been 'fixed' by re-nationalisation, regardless of the existence of evidence to the contrary. In fact, neither private nor public owners maintained rail infrastructure at anywhere near replacement levels from 1991 to 2008 (Heatley 2009 pp. 34–5). Advocates of structural reform will need to overcome this public perception.

A possible impediment to change is emphasis on over-detailed centralised transport network planning, under various labels including 'logistics' and 'integrated planning'. While the goals of such activities are laudable, the vast majority of transport supply and demand factors are outside the control of the planners. Treasury (2010 p. 88) recognises this when they state 'the parts of the [rail freight] network that thrive, and those that decline, will be determined to a large extent by the decisions of our major exporters and by the configuration of our ports'. There is a risk that integrated planning is used as a delaying tactic that supports the *status quo*, rather than as a true search for efficiency. Supply and demand uncertainties need to be

acknowledged as such, and not unduly delay decision making. Technical coordination – the efficient interchange of passengers and freight where transport modes interconnect – needs little central coordination; it will happen where demand is present and transport suppliers can profit from it.

10.7.3 Small steps to support reform

One useful reform would be to structurally separate the urban commuter services from the freight operator, with distinct branding and reporting. Advocates of the *status quo* frequently rely on confused arguments that ascribe commuter rail benefits to the freight network and *vice versa*. Functional and structural separation could allow for a more rational debate of these logically separate businesses.

The advocates of policy reform are at a substantial information disadvantage to the incumbent firm. The level of financial detail (in particular breakdowns by business unit) and frequency of reporting have declined under public ownership compared with the situation under private ownership. A small but useful step in enabling the effective advocacy of structural reform would be to improve the financial reporting to the public, permitting effective evaluation of the rail sector by competitors and independent commentators.

10.7.4 More questions than answers

In 2010 rail faces an uncertain future, and for policy makers there are more questions than answers. How best to address rail's long legacy of under investment and deferred maintenance (e.g., locomotives with an average age of 31 years, more than 550 bridges over 80 years old and dilapidated passenger services)? Much work is already in progress: major urban rail upgrades are underway in Wellington and Auckland, new locomotives and carriages are being purchased and some heavily used parts of the network are being upgraded. But the total cost of overcoming this legacy may be as much as NZD2 billion over the next 5 years (The Treasury 2009 p. 85). And quite apart from 'catch up' funding, there is also a need to invest in new technology and infrastructure that would allow KiwiRail to take advantage of emerging business opportunities. It cannot be assumed that competing transport modes will stay stagnant – KiwiRail's new infrastructure will be competing for customers against more efficient coastal shipping and larger trucks with improved fuel efficiency running on better roads.

The 2009 government-appointed RDG concluded that while KiwiRail's commercial revenue might be sufficient to fund its operating costs, it would be well short of the level required to provide a return on capital, or to fund asset renewals and new investment. Nor would it be sufficient to 'maintain ongoing operating capability at a level to achieve the government's desired policy outcomes' (RDG 2008b p. 6).

The clear need for ongoing government support was recognised when the government allocated NZD90 million in operating grants to KiwiRail for 2009/10. But is it prepared to keep on subsidising rail to this extent, and for how long? How can the government both deliver subsidies *and* incentivise good commercial decision making aimed at maximising financial returns? And should government subsidies be used to keep on supporting parts of the network that have long been non-commercial? An RDG report (2008c p. 2) noted that some routes had a good commercial rate of return (15–20%) while others were operating on negative returns.

The government expects 'that all investments in the national rail network provide a commercial rate of return. Taxpayer subsidies should be provided only as a last resort and

where there is clear evidence that it will improve service and provide a decent return on taxpayers' money' (Joyce 2009b). Although the government had not yet announced its rail policy at the time of writing, it appeared to be preparing to withdraw its NZD90 million operating subsidy to KiwiRail for 2011/12, while continuing to provide capital grants for infrastructure renewal and development without expecting any return on that investment.

Government support for commuter rail would remain and KiwiRail would continue to provide some passenger services, possibly in conjunction with private operators. But in terms of KiwiRail's core freight business, a clear message seemed to be emerging: the government expected the company to generate enough revenue to meet its own cash requirements – not necessarily to the point of providing the government (as owner) with a return on its investment, but sufficient to meet its own renewal and capital development costs. Exactly how KiwiRail was to achieve this turnaround in performance remained unclear, but it was likely to involve improvements in yield and productivity. The possibility of cutting unprofitable activities (such as long-distance passenger services) was still on the table.

The government does not wish to be seen as supporting rail over competing modes of transport, and this position moves it marginally closer to that goal. It is interesting to note that when the first National Infrastructure Plan was released in March 2010, rail was not among the government's eight key or emerging infrastructure priorities (The Treasury 2010 p. 15).

Other policy questions surround the extent to which rail can deliver other economic and environmental benefits – the 'positive externalities' which the previous government used to justify its buy back of the railway. Research by the New Zealand Institute for the Study of Competition and Regulation in both 1999 and 2009 suggested that the magnitude of these externalities had been overstated. In some cases the benefits sought – such as reducing greenhouse gas emissions or congestion – could best be achieved by other means, such as a carbon tax, emissions trading scheme, commuter rail subsidies or road user charging. The research found that while rail did have some positive effects on economic development and the quality of the environment, they were not enough to outweigh rail's negative contribution to New Zealand's overall economic performance (ISCR 1999b p. 85; Heatley 2009 p. 58).

Similar observations have been made by the Treasury. Its paper 'Infrastructure: Facts and Issues'– a discussion document intended to guide the preparation of the first National Infrastructure Plan – noted that economic benefits are likely to be realised only on heavily used parts of the network. Treasury offered the following analysis:

> The argument for ongoing public subsidisation of the network tends to rest on the premise that rail offers positive externalities (e.g., reduced congestion, emissions and accidents) and that road transport does not pay for its full social costs, reducing the ability of rail to compete. There is little current evidence to support this.
>
> Much of the New Zealand rail network is uneconomic, even when taking into account the environmental value of rail's greater fuel efficiency. While there may be a case for subsidising rail up to a certain point, based on its social and environmental contribution, it is an unresolved question about whether this would be sufficient to cover the full capital costs of the entire rail network. (The Treasury 2009 p. 29)

Environmental benefits respond to the same economies of density that drive railway economics. The fixed (economic) costs of rail incur environmental costs in parallel. The main inputs into railway construction and maintenance are earthmoving (diesel), transport (diesel), steel and concrete. All have significant environmental costs, including being substantial sources of greenhouse gas emissions. On the operational side, heavily used lines are more

likely to carry full trainloads, and these offer significantly better fuel efficiencies than partial trainloads. It follows that the most environmentally beneficial parts of the network are likely to be those in least need of government subsidy.

At the time of writing, the Ministry of Transport was undertaking more work to quantify the economic and environmental benefits of rail. In regard to the latter, there was a particular focus on determining the 'environmental footprint' costs to New Zealand if rail were not part of the overall transport mix.

In deciding how best to proceed, the government will negotiate a course between doing what is economically rational and what is politically feasible. It has been suggested that the most economically rational course would be to largely abandon rail (Malpass 2009). This view acknowledges that rail has placed an enormous burden on New Zealand taxpayers for decades, and the situation is unlikely to change. Without the loss-making railways, hundreds of millions of dollars could be diverted to more socially and economically beneficial uses.

A less extreme course would be to reduce the size of the network to only its most economic components (widely considered to comprise around 1500–2000km: see RDG 2008b p. 3; Heatley 2009 p. 69) and focus on rail's competitive advantages: the point-to-point transport of large volumes of bulk freight and carefully planned commuter rail. Under this scenario, line closures and land sales would fund the upgrade of the network to modern standards (Heatley 2009 pp. 70–2). However, the present government seems disinclined to move in this direction, seeing the retention of the national network as no more costly than having a disjointed smaller network (which could necessitate some duplication of rolling stock across its disparate parts).

The course that the previous government was advised to take by the RDG avoided any such potentially controversial steps as dismantling the national network. While the RDG recognised that, on a purely financial basis, 'rail is not commercially sustainable without a significant reduction in the size of the existing network' (RDG 2008c p. 2), its ultimate recommendation was to retain the network at its present size through ongoing government support.

The government today faces some difficult decisions. What role does it want rail to perform, and how much is it willing to spend on it? Is it prepared to wear the political consequences of making tough decisions about rail, with all the economic and social changes that may flow from them? Fundamentally, to echo the words of the Railways Minister more than 80 years ago, it needs to decide: what are 'the true interests' of New Zealand when it comes to rail?

10.8 SOME LESSONS FROM THE NEW ZEALAND EXPERIENCE

10.8.1 Rail-specific lessons

New Zealand's experience with rail may be different to that of other economies, but it is by no means unique. There are close parallels with the experiences of Victoria (2007) and Tasmania (2009) in Australia, where those governments purchased previously privatised rail networks following near-abandonment by their owners. Successful structural reform requires a solid understanding of the economics of rail in general, and how they play out given the specific circumstances and history of an economy's transport system. While applying lessons from one economy to another should be done cautiously, the following observations from New Zealand are pertinent:

- Rail assets are very long-lived, but the demand for specific types of rail services has changed over significantly shorter timeframes. When combined with the high costs

and sunk nature of rail infrastructure, this makes the problem of determining the optimum type and level of investment very difficult indeed.

- The long life of rail assets means that it is possible to boost short-term financial performance by deferring maintenance and upgrades, and incentives exist for both public and private owners to defer these costs. The inevitable long-term consequence is a dilapidated and uncompetitive rail system.
- The economic performance of rail in New Zealand has long been poor. Unable to cover its capital costs, it relies on taxpayer subsidies to cover its operating deficit. This performance can be attributed to the convergence of distinctive physical factors (low population density, topography and geographical isolation) with rail's underlying economic characteristics: high proportions of sunk fixed costs, expensive maintenance and renewals, and diminishing returns on infrastructure investment.
- Simply changing the ownership model – from public to private and back again – has not changed the fundamental economics of rail.
- A lack of competition within the rail sector does not give a rail operator a natural monopoly. KiwiRail competes with other transport modes – with trucks and coastal shipping for freight, and with aeroplanes, buses and private cars for passengers. It is thus unhelpful to consider rail in New Zealand in terms of a natural monopoly.
- Any given rail project may or may not have net environmental benefits – the existence and level of such benefits can only be determined once details of that specific project are known. The most environmentally beneficial projects are likely to be those in least need of government subsidy.
- New Zealand's experience suggests that increasing or maintaining the size of the network to achieve so-called economies of network size does not enhance economic performance. Railways are driven by the economies of density, which can be achieved by using a rail network more and better. Economies of density might be best achieved in New Zealand by focusing on a smaller, more heavily used subset of the current network – a scenario which would also allow rail's potential economic and environment benefits to be realised.

10.8.2 Structural reform lessons

Some more general lessons about structural reform also emerge from this case study:

- Structural reform needs to be very clear about its goals and how the reform will achieve those goals. All underlying assumptions should be clearly identified.
- The goals of structural reform will shift over time. It is more appropriate to compare the outcomes of reforms against their original goals than against newly defined ones.
- Intervention to reverse previous structural reforms is likely to have long-term ramifications: any future government wishing to pursue reform may find it cannot credibly commit to non-interference.
- New Zealand's experience points to an inherent conflict between financial and political goals for rail. Structural reform is unlikely to resolve such conflicts.
- Reforms designed to create competition within a sector may not be necessary (or even desirable) if the sector faces effective competition in its product markets.
- Some economic problems may be too large to be 'fixed' by structural reform. It may be necessary to recast the problem in a wider context.
- The mere existence of externalities is insufficient cause for specific government interventions. Externalities need to be quantified, and if material, a least-cost approach should be adopted for their mitigation. The least-cost approach identified may be cross-sectoral or even focused on other sectors entirely.

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