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**Report to the  
E.J.Brenan Memorial Trust**

**REVIEW OF ROAD FREIGHT COSTS IN NEW  
ZEALAND AND COMPARABLE AUSTRALIAN  
STATES**

**Prepared by**

**BOB PEARSON**

**PEARSONS TRANSPORT RESOURCE CENTRE PTY LTD**

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**Pearsons Transport Resource Centre Pty Ltd**

ABN 54 075 922 566

**8 Meaka Court Warrandyte Vic 3113 Australia**

**tel: + 613 9844 2555 fax: + 613 9844 2209**

**e-mail: [bobp@ptrc.com.au](mailto:bobp@ptrc.com.au)**

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A number of transport operators in Australia and New Zealand made an invaluable contribution to this report by freely discussing confidential costing data with the consultant. These operators are not identified here but each one is sincerely thanked.

## **Disclaimer**

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# 1. BACKGROUND

## 1.1 Introduction

The E.J.Brenan Memorial Trust engaged Pearsons Transport Resource Centre Pty Ltd (*PTRC*) to investigate and review the freight rates for heavy road transport vehicles in New Zealand with the freight rates in comparable Australian States.

The objectives of the review were:

- to determine the freight rates for heavy road freight vehicles in New Zealand and the freight rates in comparable Australian States; and
- to identify any differences in freight rates and the major factors that cause those differences.

This report details the findings of the review.

## 1.2 Choice of Comparable States in Australia

The comparison of New Zealand freight rates was made with Victoria and Tasmania. Victoria was chosen ahead of NSW as it is of a similar land area to New Zealand whereas NSW is nearly 4 times bigger than Victoria. Tasmania is only a quarter of the size of NZ but has similar topography to many parts of NZ.

## 1.3 Configurations for Comparison

The study examined three long haul vehicle configurations and gross mass as shown in Table 1. Note that the term B-train is used in New Zealand *and* throughout this report but these vehicles are called B-doubles in Australia.

**Table 1: Vehicle configurations used in the comparison**

Configuration	New Zealand	Australia
Single articulated	6 axles at 39 t gross mass	6 axles at 42.5 t gross mass
Truck and trailer	8 axles at 44 t gross mass	7 axles at 50 t gross mass
B-train (B-double in Australia)	8 axles at 44 t gross mass	9 axles at 62.5 t gross mass

These three configurations carry the bulk of the freight in New Zealand, Victoria and Tasmania and will therefore give the most accurate comparison. The gross mass for the single articulated vehicle and B-trains in Australia could have been 45.5 tonnes and 68 tonnes respectively but as vehicles at those gross masses are permitted only on specified routes it was deemed that the more common gross mass values as shown in Table 1 were more appropriate.

Curtain-sided bodies were used for capital costing apart from the Australian truck and trailer. In Australia, the truck and trailer is generally an urban vehicle and widely used in the quarry industry and therefore a tipper body has been assumed. However, the distances travelled by Australian truck and trailer combinations at 50 tonnes are not much lower than the average for the NZ industry despite being primarily an urban vehicle.

## 1.4 Previous Research

The Australian Bureau of Industry Economics Research Report 46, *International Performance Indicators – Road Freight* (BIE 1992) undertook, inter alia, a comparison of the truck vehicle operating costs (VOC) in Australia, the US, Canada and the UK. The costs were subdivided into 5 categories – Capital, Driver, Fuel & Oil, Repairs & Maintenance and Other. The costs were reported for a short haul vehicle (17 tonnes GVM, 80,000 km pa) and a long haul vehicle (42 tonnes GVM, 150,000 km pa, prime mover plus tri-axle trailer). The report included an adjusted VOC, being total VOC less road related taxes and charges

Pizarrio Associates took the results of *BIE 1992* for long haul and extended the comparison of operating costs to include New Zealand, including an estimate of VOC adjusted for taxes and charges. The results of that research are provided in *International Comparison of Heavy Vehicle Costs* (Pizarro 1996), prepared for Mainfreight Limited.

A recent report to the Road Transport Forum <sup>1</sup> by the University of Waikato gives results of a survey of operators throughout New Zealand. Among the items reported were return on assets and a break-up of total costs incurred as a whole and by different activity groups. This report provided input into the values used for New Zealand.

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<sup>1</sup> 2006 Operator Comparison Report by the University of Waikato

## 2. IMPORTANT COST CONSIDERATIONS

### 2.1 Establishing Cost Centres

The total vehicle operating costs have been subdivided into the following cost centres:

- Capital (depreciation);
- Fuel;
- Driver;
- Repairs & Maintenance; and
- Other.

All costs are in New Zealand dollars, with a conversion rate from Australian dollars to New Zealand dollars of \$AUD 1 = \$NZD 1.16.

There are a number of decisions to be made in assigning costs. In particular, the Goods and Services Tax (GST), which is 12.5% in New Zealand and 10% in Australia, has been *excluded* wherever applicable as it is a *refundable* expense, which is different to other business expenses that are *deductible*. Vehicle insurance and registration charges are included in the *Other* category, similar to previous studies, although they could have been included under capital.

Table 2 lists the components included in the cost centres.

**Table 2: Components included in the five cost centres**

Cost Centre	Components	Comment
Capital	Depreciation	GST on purchase price is excluded as it is a refundable expense.
Fuel	Diesel fuel cost including all relevant taxes and charges	In Australia, costs exclude the rebate available under the Energy Grants Credit Scheme
Driver	Wages and equipment Superannuation (Aust) Payroll tax (Aust) Leave coverage (including annual and sick leave)	Payroll tax applies in Victoria (5.05%) and in Tasmania (6%) and is a state based tax.
Repairs & Maintenance	All costs associated with repairing and maintaining the vehicle, including tyre and oil costs	Oil is included in maintenance (servicing) as that is generally when the cost for oil is incurred.
Other	Road User Charges (NZ) Registration charges (Aust) Licensing and ACC charges (NZ) Vehicle insurance Overheads and profit	Vehicle insurance and annual vehicle charges are included here although they could be included under capital.

## **2.2 Establishing Costs**

### **2.2.1 Introduction**

Vehicle operating costs are extremely variable and dependent on many factors. This report does not attempt to replicate any particular operation but uses representative figures derived from a range of data, including discussions with operators in New Zealand, Victoria and Tasmania. The calculated rates will therefore be higher than some actual rates in some cases and lower than actual rates in other cases.

The main issues and assumptions are outlined in this Section.

### **2.2.2 Capital costs and depreciation**

Capital costs will vary with many factors, including:

- whether the prime mover originates from Europe, America or Japan and is a “premium” or “standard” brand;
- the vehicle specifications; and
- discounts that might be available due to fleet size.

Depreciation of the assets will also depend on the annual distance travelled and the number of years before replacement. It appears that New Zealand operators use new vehicles for longer than their Australian counterparts.

Costs for trailers and semi-trailers will depend on the body type and vary very substantially. To eliminate the difference in costs between different body types, a standardised body of a curtain side was used apart from the Australian truck and trailers that were assigned the more common tipping body.

Taxation laws in both countries allow straight line depreciation of a recently acquired asset. To avoid any inconsistencies about different travel distances and the time assets are held (and hence the impact on residual value), this straight line depreciation rate has been used in these calculations. It is possible that depreciation might be on the high side due to the use of the straight line depreciation but this is seen as more appropriate than attempting to estimate realistic depreciation rates and is also consistent between jurisdictions.

### **2.2.3 Fuel**

The most important aspect of the fuel cost is the fuel economy achieved by the truck. Some of the factors that influence fuel economy include gross mass, topography and body type (affecting wind resistance). The fuel usage has been estimated based on discussions with a range of operators. Fuel consumption is greater in New Zealand and Tasmania than in Victoria due to the more variable topography.

Total fuel cost is heavily dependant on the annual distance travelled. For New Zealand, the distances that were used were based on industry advice as to the average distance travelled. In Australia, the average distance was derived from the Survey of Motor Vehicle Use prepared by the Australian Bureau of Statistics. Calculations were made both for the average distance and also a common distance of 100,000 kilometres per year, close to the values used for New Zealand vehicle. Travel distances used are shown in Table 3.

**Table 3: Average distance and common distances used in the research**

Config'n	New Zealand			Victoria			Tasmania		
	B-train	Artic	Truck trailer	B-train	Artic	Truck trailer	B-train	Artic	Truck trailer
Average distance	110,000	100,000	100,000	170,000	110,000	100,000	160,000	105,000	105,000
Common distance	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

#### **2.2.4 Driver**

The cost for a driver has been taken for the average type of vehicle and not the higher rates that apply to some sectors, for example petroleum.

The main influence on driver costs is overheads. Overheads to both New Zealand and Australia are:

- cost of workers compensation;
- provision for public holidays, annual leave and sick leave; and
- driver equipment.

In Australia, additional costs are incurred for compulsory superannuation (9%) and for payroll tax (5.05% in Victoria and 6% in Tasmania), and in New Zealand for medical insurance. While it is recognised that medical insurance is not universal in New Zealand, it has been included as it is used to support driver retention.

#### **2.2.5 Repairs and maintenance**

With newer vehicles, repairs and maintenance are lower than for older vehicles and the cost is a 5 year average. Tyre costs are included in this cost centre as is the cost of oil as that is usually where the cost is incurred.

The costs have been calculated based on cost per kilometre of travel.

#### **2.2.6 Other**

The *Other* cost centre includes the costs outlined in Table 1.

The item for overheads and profit is affected by a number of factors. Some operators have a fixed amount per vehicle for overheads. Margins for profit can be affected by pressure to keep the vehicle productive. The allowances made in each country are similar so a figure of 19% has been used for both countries so as not to affect results.

#### **2.2.7 Taxes and charges**

Both total operating costs and operating costs excluding taxes and charges are presented in the Section 3. The taxes and charges excluded are:

- Road User Charges and Licensing and ACC charges (NZ);
- registration and fuel charges (Australia); and
- payroll tax (Australia).

Superannuation cost in Australia has not been included in taxes and charges as they are a transfer payment from the operator to the future earnings of the driver.

### 3. FREIGHT COSTS COMPARISON

#### 3.1 General

It is re-iterated that the calculated costs do not necessarily represent any particular operation but are representative of the costs incurred by operators in moving freight on the particular vehicle configurations examined.

Costs are presented for the following cases:

- cost per kilometre of travel; and
- cost per net tonne kilometre, allowing for laden travel only 50% of total travel.

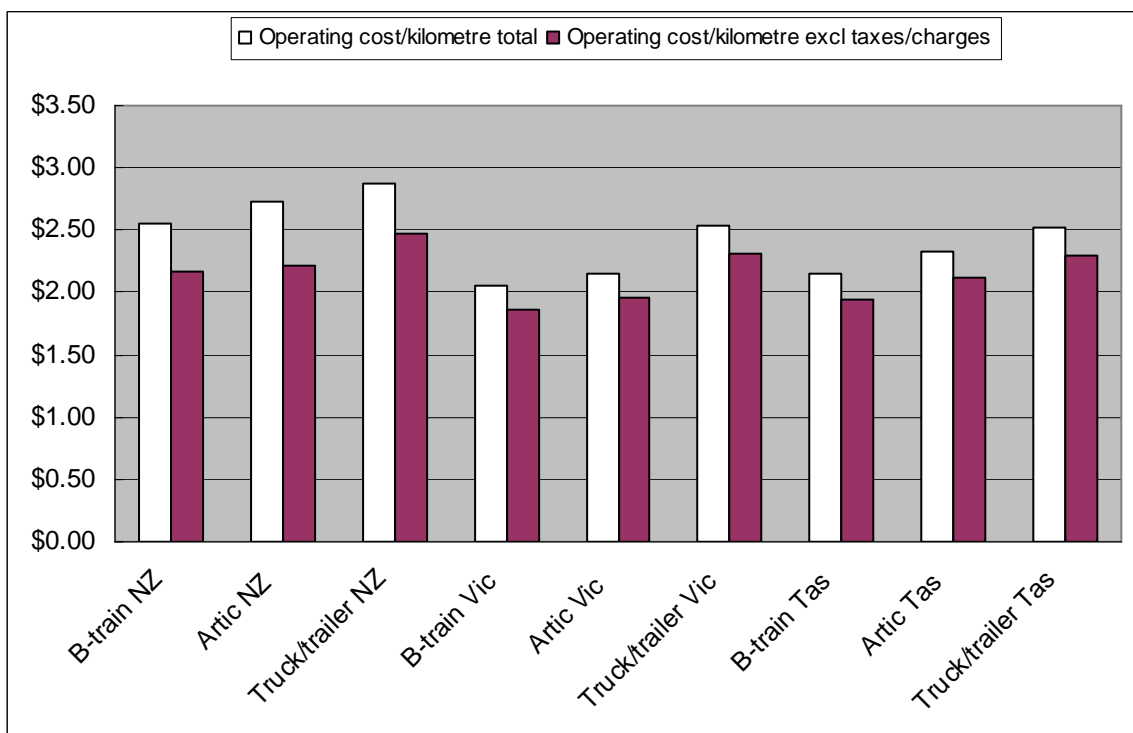
The cost per net tonne kilometre is the cost per kilometre of travel divided by the payload, so it could also be called the cost per payload tonne kilometre of travel.

In both cases, the costs are presented as total costs and costs without taxes and charges. Section 3.2 presents these costs at the assessed average annual distance travelled and Section 3.3 presents the same costs at a common annual distance travelled of 100,000 kilometres. Section 3.4 presents costs with higher travel assumed in New Zealand.

#### 3.2 Costs at assessed average distance travelled

Figure 1 shows the calculated operating cost per kilometre of annual travel.

**Figure 1: Operating costs per kilometre – average distance**



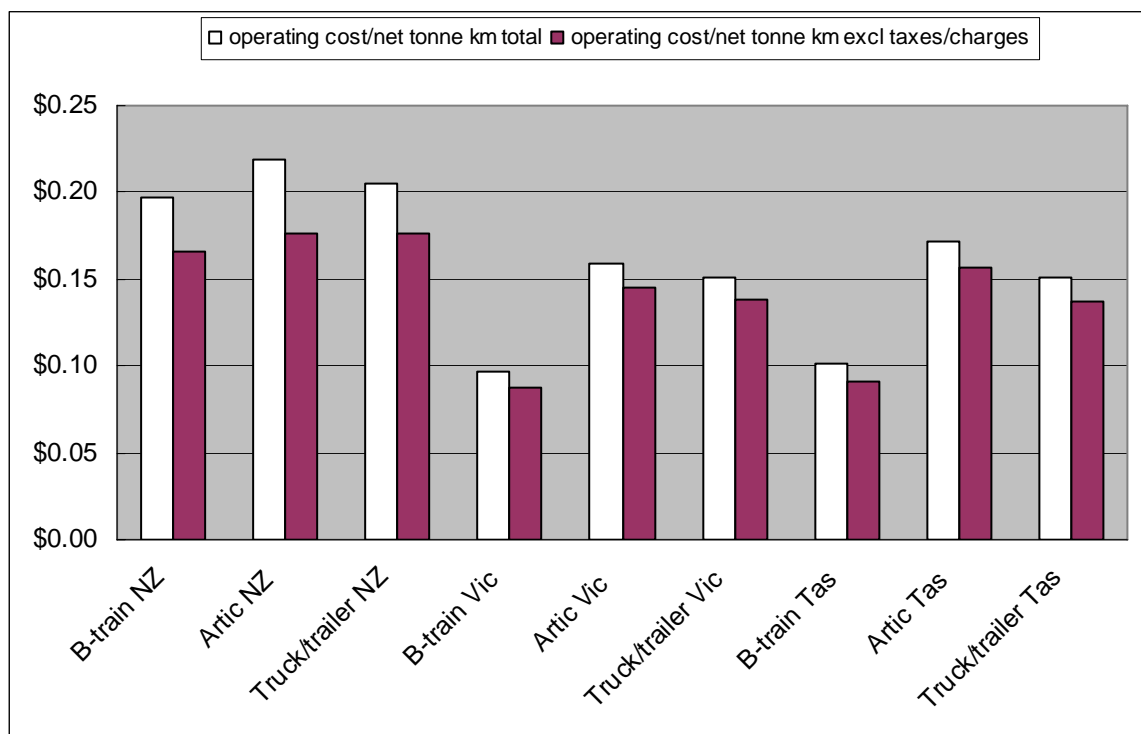
The operating cost per kilometre for New Zealand vehicles is higher than for the Australian vehicles. On average, the cost per kilometre for New Zealand vehicles is 21% higher than Victoria and 16% higher than Tasmania. When taxes and charges are excluded, the differences reduce to 12% higher than Victoria and 8% higher than Tasmania.

For the individual vehicles, the New Zealand costs are:

- for B-trains, 24% higher than Victoria and 19% higher than Tasmania, reducing to 17% and 12% higher respectively when taxes and charges are excluded;
- for single articulated vehicles, 27% higher than Victoria and 18% higher than Tasmania, reducing to 13% and 4% higher respectively when taxes and charges are excluded;
- for truck trailers, 14% higher than both Victoria and Tasmania reducing to 7% higher when taxes and charges are excluded.

Figure 2 shows the operating costs per net tonne kilometre, assuming that only 50% of travel is laden.

**Figure 2: Operating cost per net tonne kilometre – average distance**  
(assuming 50% laden travel)



The operating cost per net tonne kilometre for New Zealand vehicles is again higher than for the Australian vehicles. On average, the cost per tonne kilometre for New Zealand vehicles is 52% higher than Victoria and 46% higher than Tasmania. When taxes and charges are excluded, the differences reduce to 40% higher than Victoria and 35% higher than Tasmania.

For the individual vehicles, the New Zealand costs are:

- for B-trains, 103% higher than Victoria and 94% higher than Tasmania, reducing to 91% and 82% higher respectively when taxes and charges are excluded;
- for single articulated vehicles, 38% higher than Victoria and 27% higher than Tasmania, reducing to 22% and 12% higher respectively when taxes and charges are excluded;
- for truck trailers, 36% higher than both Victoria and Tasmania reducing to 28% when taxes and charges are excluded.

Finally, the contribution to the total operating costs in percentage terms is given in Table 4.

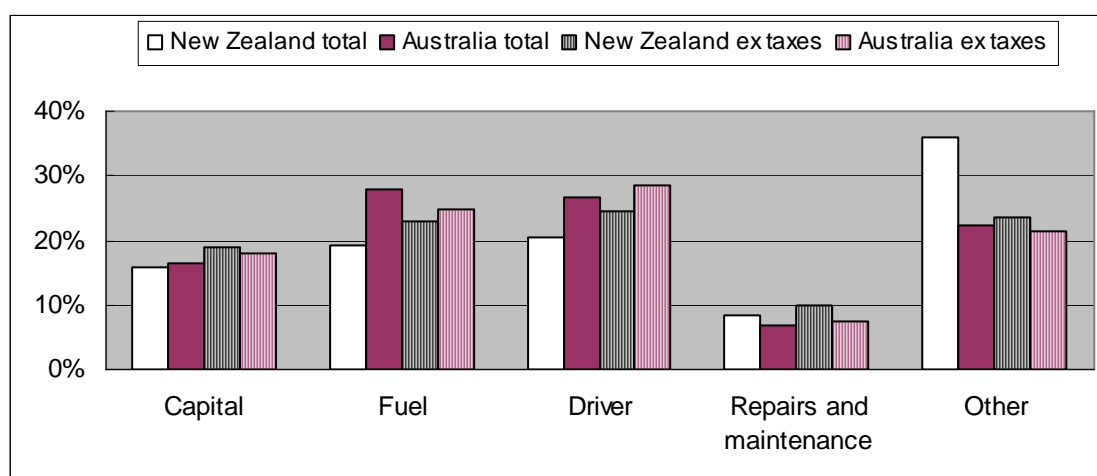
**Table 4: Contribution to total operating costs**

	New Zealand			Victoria			Tasmania		
	B-train	Artic	Truck/ trailer	B-train	Artic	Truck/ trailer	B-train	Artic	Truck/ trailer
<b>Total costs</b>									
Capital	14.4%	14.7%	18.6%	13.6%	16.2%	18.4%	13.9%	17.4%	18.4%
Fuel	20.8%	18.9%	18.5%	33.0%	26.9%	25.4%	31.6%	25.5%	25.5%
Driver	20.7%	20.3%	20.3%	22.4%	29.8%	28.6%	22.9%	29.0%	27.5%
Repairs and maintenance	9.0%	7.5%	8.4%	8.8%	5.1%	5.0%	9.3%	5.9%	6.1%
Other	35.1%	38.6%	34.3%	22.2%	22.0%	22.6%	22.3%	22.2%	22.4%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Cost excluding taxes and charges</b>									
Capital	17.0%	18.2%	21.6%	15.1%	17.8%	20.2%	15.4%	19.0%	20.1%
Fuel	24.4%	23.3%	21.4%	29.4%	23.8%	22.3%	28.1%	22.5%	22.4%
Driver	24.5%	25.2%	23.6%	24.1%	31.7%	30.3%	24.5%	30.6%	29.0%
Repairs and maintenance	10.7%	9.3%	9.7%	9.8%	5.6%	5.5%	10.3%	6.4%	6.7%
Other	23.5%	24.1%	23.6%	21.5%	21.2%	21.6%	21.6%	21.4%	21.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Table 4 shows that the vehicles traveling the greatest distances (the B-trains in Victoria and Tasmania) have a significantly greater proportion of the total operating cost in fuel and the lowest proportion of capital. Driver costs in Australia are greater due to the payroll tax and superannuation requirements. New Zealand consistently has the highest contribution in the *Other* category but when taxes and charges are excluded, the contributions in this category are similar, which would be expected as the largest contribution becomes *Overhead and Profit*.

Figure 3 shows the average contributions in New Zealand and Australia.

**Figure 3: Average contributions – total and excluding taxes and charges**

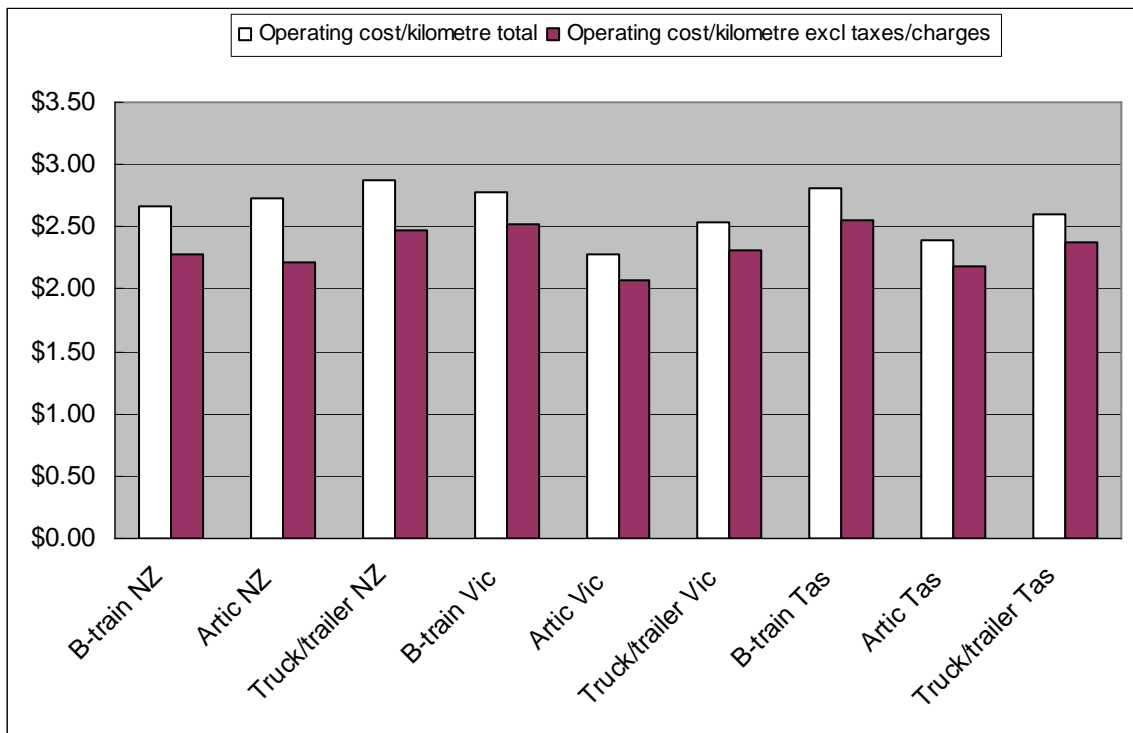


### 3.3 Sensitivity test – costs at common distance travelled

The following costing has been undertaken assuming that the annual distance travelled is common at 100,000 kilometres per year. No other adjustments have been made on the assumption that the total time for drivers is the same and the average speed is lower. This will marginally affect depreciation and fuel consumption but the differences will be small.

Figure 4 shows the operating costs per kilometre for the common distance of 100,000 kilometres per annum

**Figure 4: Operating costs per kilometre – common distance**



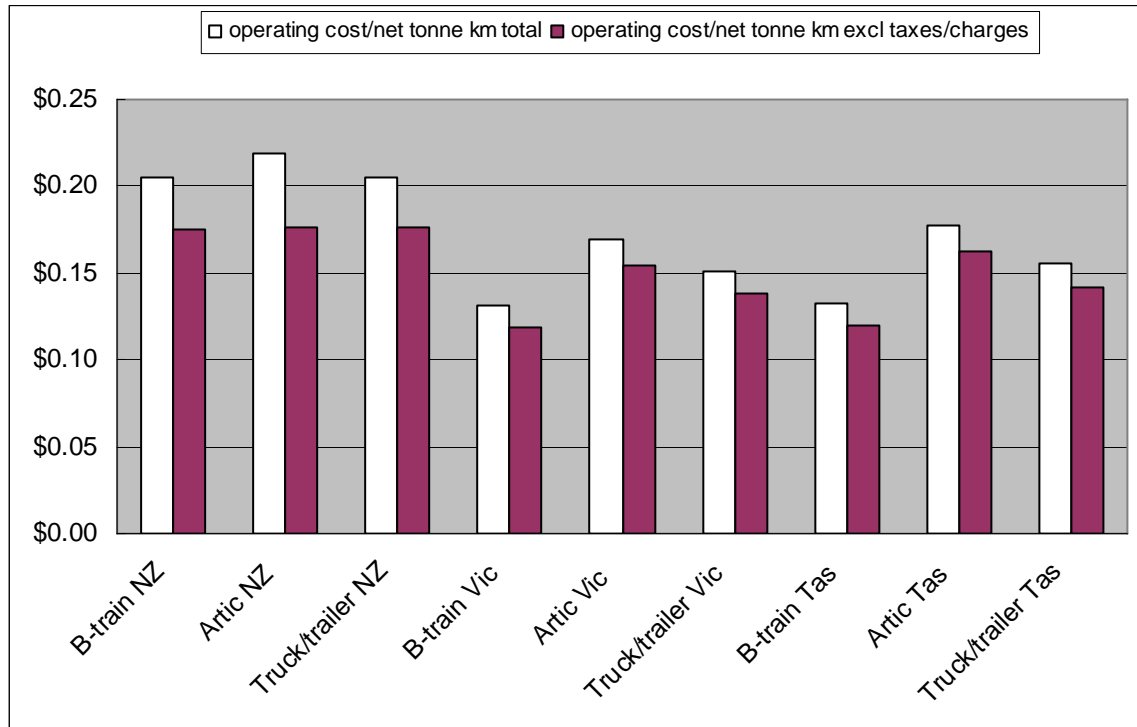
On the basis of a common travel distance, the operating cost per kilometre for New Zealand vehicles is higher than for the Australian vehicles when taxes and charges are included but the same or lower when taxes and charges are excluded. On average, the total cost per kilometre for New Zealand vehicles is 9% higher than Victoria and 6% higher than Tasmania. When taxes and charges are excluded, New Zealand average costs are the same as Victoria and 2% lower than Tasmania.

For the individual vehicles, the New Zealand costs are:

- for B-trains, 4% lower than Victoria and 5% lower than Tasmania, increasing to 10% and 11% lower respectively when taxes and charges are excluded;
- for single articulated vehicles, 20% higher than Victoria and 14% higher than Tasmania, reducing to 6% higher than Victoria and 1% higher than Tasmania when taxes and charges are excluded;
- for truck trailers, 13% higher than Victoria and 10% higher than Tasmania reducing to 7% higher than Victoria and 4% higher than Tasmania when taxes and charges are excluded.

Figure 5 shows the operating costs per net tonne kilometre, again for a common distance of 100,000 kilometres per year.

**Figure 5: Operating cost per net tonne kilometre – common distance**  
(assuming 50% laden travel)



The operating cost per net tonne kilometre for New Zealand vehicles is also higher than for the Australian vehicles for a common travel distance. On average, the cost per tonne kilometre for New Zealand vehicles is 40% higher than Victoria and 35% higher than Tasmania. When taxes and charges are excluded, the differences reduce to 29% higher than Victoria and 25% higher than Tasmania.

For the individual vehicles, the New Zealand costs are:

- for B-trains, 57% higher than Victoria and 55% higher than Tasmania, reducing to 48% and 46% higher respectively when taxes and charges are excluded;
- for single articulated vehicles, 30% higher than Victoria and 23% higher than Tasmania, reducing to 15% and 9% higher respectively when taxes and charges are excluded;
- for truck trailers, 36% higher than Victoria and 32% higher than Tasmania reducing to 28% and 24% when taxes and charges are excluded.

### 3.4 Sensitivity tests – higher annual travel in New Zealand

It is possible that the annual travel distances for the New Zealand configurations is the least accurate of all parameters, as the Australian travel distances are derived from official statistics and estimates of other costs (e.g. purchase price, fuel consumption, driver costs) derived from research and discussions are considered reasonably reliable. The Waikato University research referred to in Section 1.4 identified that, based on a survey of 28 operators, the average annual distance travelled for intercity operations was 130,000 kilometres per annum. Sensitivity analyses were therefore undertaken at this annual travel.

Table 5 shows the results. It can be seen that the increase in travel produced reductions in cost in both categories, with slightly greater reductions in the costs without taxes. However, the costs are still higher than comparable measures in Australia at lower annual travel.

**Table 5: Change in operating costs with increased vehicle travel – NZ vehicles**

		<b>B-train</b>	<b>Artic</b>	<b>Truck/ trailer</b>
Distance increase		18.2%	30%	30%
Decrease in original cost				
Cost/km	Total cost	7.2%	10.6%	11.9%
	Excluding taxes	8.4%	13.1%	13.8%
Cost/net tonne km	Total cost	7.2%	10.6%	11.9%
	Excluding taxes	11.8%	11.8%	11.9%

## **4. FACTORS IN FREIGHT RATES**

### **4.1 Payload and Distance Travelled**

It has long been recognised that the most important influences on freight rates are payload and distance travelled. A greater payload comes at some additional cost due to increased fuel consumption, driver wages and maintenance including tyre wear but the proportional increases in costs is substantially less than the proportional increase in payload. Distance travelled has a lesser influence but proportional costs for capital are reduced and some fixed costs such as insurances do not depend upon distance travelled.

The influence of these two factors on freight rates has been shown in Section 3, with Figure 2 on page 7 as the greatest illustration. The freight rates per net tonne kilometre of travel (also known as rate per payload tonne kilometre of travel) for New Zealand B-trains at a gross mass of 44 tonnes and traveling 110,000 kilometres per year are double that of the Australian equivalent which has a gross mass of 62.5 tonnes and travels 160,000 or 170,000 kilometres per year.

A further illustration of the effect of distance is shown in Section 3.3, which tested the freight rates in the three jurisdictions by eliminating the distance travelled as a variable. The rate per kilometre of travel for the Victorian B-train increased by 35% when the assumed distance travelled reduced from 170,000 kilometres per annum to 100,000 kilometres per annum.

However, even with the same distance travelled as shown in Section 3.3, freight costs per kilometre of travel were still higher in New Zealand than Australia but the differences were not as significant as was the case with the estimated average distance travelled. For example, the New Zealand B-train rates per net tonne kilometre were only about 50% higher, reflecting the payload advantages of the Australian vehicles. Payload advantages for the Victorian and Tasmanian truck and trailer configurations, although smaller than the B-trains, again reflected in lower cost per net tonne kilometre. The anomaly appeared to be the single articulated vehicle, where the payloads are the closest but rates are still more than 14% higher in New Zealand. Even at 130,000 kilometres per annum, the total freight rates per kilometre were higher than the Australian freight rates at 100,000 kilometres per annum.

In both cases of average distance and common distance, when taxes and charges were excluded, the relative difference between the New Zealand freight rates and those in Victoria and Tasmania reduced. This indicates that total taxes and charges in New Zealand are higher than those in Australia.

### **4.2 Comparison of Total Freight Rates**

The differences in the calculated freight rates between New Zealand and both Victoria and Tasmania per kilometre of travel is given in Table 6.

**Table 6: Differences in total freight rates per kilometre of travel (\$/km)**  
(rates in New Zealand less rates for Victoria and Tasmania respectively)

Cost centre	Victoria			Tasmania		
	B-train	Artic	Truck trailer	B-train	Artic	Truck trailer
Capital	\$0.09	\$0.06	\$0.07	\$0.07	\$0.00	\$0.07
Fuel	-\$0.15	-\$0.06	-\$0.11	-\$0.15	-\$0.08	-\$0.11
Driver	\$0.07	-\$0.08	-\$0.14	\$0.03	-\$0.12	-\$0.11
Repairs and maintenance	\$0.05	\$0.10	\$0.11	\$0.03	\$0.07	\$0.09
Other						
road based taxes and charges	\$0.33	\$0.47	\$0.33	\$0.33	\$0.47	\$0.34
other taxes and charges	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
remainder	\$0.11	\$0.12	\$0.08	\$0.09	\$0.08	\$0.08
Total	\$0.49	\$0.59	\$0.34	\$0.40	\$0.41	\$0.35

The differences in capital could generally be explained by the different average distances travelled whereby the proportion of the fixed capital cost is divided over more kilometres. As a general comparison, total capital costs are not significantly different as essentially the trucks are sourced from similar countries. Individual operators make their choices of what type of truck to use and, while the capital cost for a truck can vary significantly between the “premium” and “standard” brands, enquiries revealed that the actual difference in purchase price for similar vehicles is relatively small.

Net fuel cost in Australia (after the rebate under the Energy Grants Credit Scheme) is about 16% higher than New Zealand, due primarily to the fuel excise that is an allocated charge for road use (19.6 cents/litre). With fuel contributing between 20% and 34% of total vehicle operating cost, this difference accounts for an additional cost of per kilometre in Australia. The less hilly terrain of Victoria compared to both New Zealand and Tasmania provides a slight advantage in fuel economy but the difference is not significant.

Driver costs in Victoria and Tasmania are generally higher than in New Zealand, primarily because of the cost of payroll tax and superannuation that adds an additional 14% or 15% to the overheads for a driver.

It appears that maintenance and repair costs in New Zealand are slightly higher than in either Victoria or Tasmania.

In the *Other* category, the major difference in cost are the road based taxes and charges in New Zealand. As noted above, a further road based charge is imposed in Australia for fuel, and the issue of road based taxes and charges is further examined in Section 4.3. As the *remainder* is primarily the *Overheads and Profit* category, which as assessed as a percentage of cost, the higher costs in New Zealand will result in a higher proportion of *Overheads and Profit*. A change to a fixed cost per vehicle would have lessened the difference.

### 4.3 Impact of Taxes and Charges

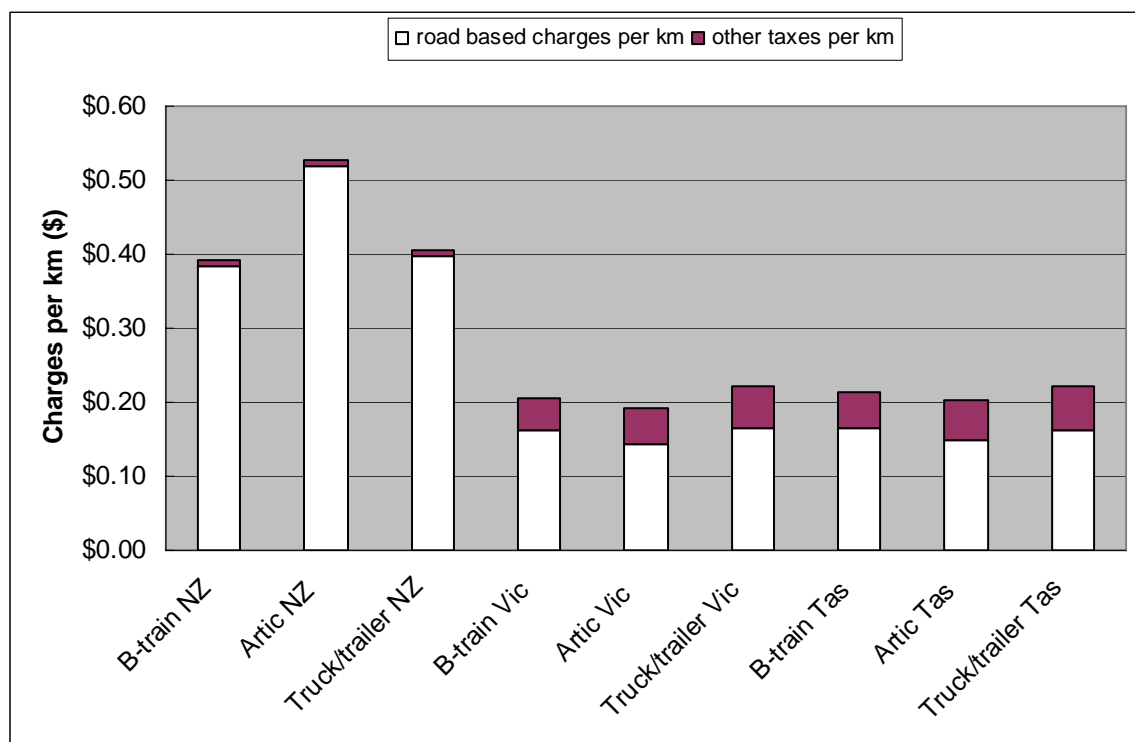
Taxes and charges that were excluded from the calculations undertaken in Section 3 can be divided into general taxes and charges and road based taxes and charges. Road based taxes and charges are:

- for New Zealand, Road User Charges (RUC); and
- for both Victoria and Tasmania, registration and fuel charges.

The primary general taxes and charges are the payroll taxes in Victoria and Tasmania.

Figure 6 shows the contribution per kilometre of both road based taxes and general, or other, taxes and charges.

**Figure 6: Cost per kilometre of taxes and charges**



It can be seen that the general taxes and charges significantly less in New Zealand than in Australia, with the latter influenced by the payroll tax contributions. However, the road based taxes and charges in New Zealand are significantly higher per kilometre, averaging about 43 cents per kilometre or more than twice the average of 16 cents per kilometre in Victoria and Tasmania. In particular, the cost for the single articulated vehicles in New Zealand for road based taxes and charges is 52 cents per kilometre compared to 15 cents per kilometre in Victoria and Tasmania.

Total fuel tax cost in Victoria and Tasmania varies with distance travelled while the registration charges are fixed and therefore not influenced by distance travelled. For the average distance travelled, the contribution of the fuel charge is about 70% and the fixed registration charge about 30%. On the other hand, RUC in New Zealand is constant per kilometre for the same gross mass.

It is not within the scope of this project to identify reasons for or to explain the significant differences in road based taxes. However, in terms of freight rates per kilometre, the additional road based taxes and charges in New Zealand adds an additional 8% to the cost per kilometre for the B-train and the truck trailer configurations and about 14% to the cost per kilometre for the single articulated vehicle.

The Australian National Transport Commission has recently released for comment proposals for new charges that would mean a 250% increase in registration charges for B-trains and a 15% increase in registration charges for single articulated vehicles. If adopted, the increased charges would be phased in over two or three years. The proposals would result in an increase in freight rates for B-trains of 12 cents per kilometre while there would be virtually no change in the rate for articulated vehicles.

#### 4.4 Summary

The main differences in freight costs are caused by a number of factors.

*Payload* has the greatest influence on rate per net tonne kilometre of travel. With the large differences in payload between New Zealand and Australian B-trains, additional costs are incurred in all cost categories but the additional operating costs are proportionally much lower than the increase in payload. With single articulated vehicles and truck trailer configurations, the higher payloads in Australia contribute to lower freight rates per net tonne kilometre of travel.

*Distance travelled* is also an important influence on freight rates, as fixed costs become proportionally less. Vehicles in Victoria and Tasmania appear to travel greater distances than those in New Zealand but there is perhaps some doubt about this aspect when the results of the Waikato University survey are considered. Nevertheless, even for the same distance travelled, New Zealand freight rates are higher than those in Victoria and Tasmania.

*Road based taxes and charges* in New Zealand are proportionally higher than in either Victoria or Tasmania.

*Driver costs* in Australia are higher than New Zealand, mainly due to the additional costs of at least 14% incurred with payroll tax and compulsory superannuation contributions.

*Maintenance and repair* costs in New Zealand also appear to be proportionally higher than in either Victoria or Tasmania, but there may be some doubt on this aspect due to wide differences between operators.

It does not appear that *capital* costs are significantly different between the three jurisdictions. The same conclusion applies to the main *Other* cost centre of *Overheads and Profit*.

The figure below shows the cost in cents per net tonne kilometre of travel (also called payload tonne kilometre). The cost of road based taxes and charges in New Zealand range from 1.42 cents per net tonne kilometre to 2.08 cents per net tonne kilometre, with the truck trailer being the lowest and the single articulated vehicles the highest. In Victoria and Tasmania, the costs for road based taxes and charges range from 0.39 to 0.53 cents per net tonne kilometre for B-trains and the single articulated vehicle respectively.

The New Zealand costs are nearly four times as great as in Australia for the B-train and the single articulated while the costs for the New Zealand truck and trailer are nearly three times greater than in Australia.

**Cost per net tonne kilometre of taxes and charges (cents)**

