AUSTRALIAN TRUCKING ASSOCIATION RESPONSE TO THE PRODUCTIVITY COMMISSION'S REVIEW OF ECONOMIC COSTS OF FREIGHT INFRASTRUCTURE AND EFFICIENT APPROACHES TO TRANSPORT PRICING

APRIL 2006

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1. KEY POINTS

- The Productivity Commission's purview under this Inquiry is very broad. In exploring road/rail pricing regimes that can be applied consistently and are competitively neutral (meaning full user cost recovery and no subsidies to either mode or within modes), a number of options can be countenanced, including:

  (1) Consideration of pricing models that recover more than just the infrastructure construction and maintenance costs. For example, full cost pricing that recovers infrastructure and broader externality costs; and
  (2) Consideration of pricing models that recover just the infrastructure construction and maintenance expenditures. For example, maintaining the current National Transport Commission (NTC) road cost allocation and charging model, or mass- distance based charging.

Full Cost Pricing

- As a means of promoting competitive neutrality, some believe that the only 'pure' solution is to quantify and impose the full infrastructure and externality costs generated by each mode. This ensures complete standardisation and consistency of methodology. This approach also reflects economic theory that where externalities exist, economic efficiency and resource allocation can be improved if marginal social benefits equal marginal social costs (i.e. full externality charging occurs). Prima facie this may seem an attractive path to take as it would theoretically promote:

  (a) Competitive neutrality AND
  (b) A more efficient allocation of resources because of the pricing signals related to externalities that exist.

- In practice however, this approach would have significant perverse consequences and may do neither well – especially if costs offsets are not provided (e.g. via tax arrangements). Full externality charging assumes that if consumers of goods and services face a higher price, then demand and output will also fall to levels where the marginal social costs more closely reflect a level of externality that society is prepared to accept. Calculating what is the acceptable level of externality is a much more sensible and less-distortionary approach than simply imposing full externality charges. Input regulations, which will do more than encourage innovation, are likely to offer a more efficient and effective regulatory option for government in addressing some of the externality outputs of road and rail.

- In road transport at least, and given estimated road freight demand (in)elasticities of -0.9 to –1.1, increases in road freight prices that reflect full cost pricing are unlikely to lead to significant decreases in demand as the upwards price adjustment filters through the economy. The BTRE estimates that full externality pricing may lead to a 12% increase in road freight rates. Given this price adjustment, a –0.9 demand coefficient would result in approximately 10% decrease in the quantity of road freight demanded. Allowing for some substitution to rail, a price adjustment of this magnitude would result in less goods and transport services produced and consumed per annum because freight costs would become too high for certain goods and services produced to meet market prices. It is estimated that a 12% upward price adjustment in road freight rates could result in approximately $9 billion of goods and services not being demanded per annum.

Infrastructure Cost Pricing

- The second broad option available to Government is to recover costs via charging only for the infrastructure costs associated with freight transport use for both road and rail and exclude common costs generated by other users. There are a variety of ways these costs could be recovered including the current NTC cost allocation model and charges based on nationally consistent heavy vehicle registration and a net diesel excise charge (i.e. the status quo) or mass-distance based charging.

- The current NTC cost allocation/cost recovery model for heavy vehicles is meritorious because it has the following features:
    - Transparent process, although greater transparency in road expenditures and road use data is required.
    - No impact on vehicle and driver operations.
    - It generates a large quantity of revenue for government in a secure manner, with negligible scope for avoidance or evasion, through truck registration charges and net diesel excise, which at least recovers the costs allocated to heavy vehicles.
    - It is a simple, efficient administrative system.

- Mass-Distance Based Charging is problematic because:
    - It is counter intuitive in a very big country like Australia, and could be expected to produce inefficient results for all, which results would be most evident in regional and remote Australia;
    - It would require fundamental institutional changes;
    - It would at the least require greater administrative effort for trucking operators than the current system of heavy vehicle charges and, if based on telematics, would encounter technical difficulties related to communications in many areas of urban and rural Australia;
    - It would impact on truck and driver operations;
    - It is unlikely that it could be administratively simple and efficient.

- Considerable uncertainty exists as to whether mass-distance based charging would be successful in sending price signals that unlock previously constrained productivity gains in the existing road network particularly as this potential exists in some cases through the failure to implement agreed policy, as is the case with Higher Mass Limits in New South Wales and Queensland, and lack of adequate levels of investment in roads infrastructure.

- Given that mass distance charging would presumably incorporate a road wear factor related to axle loads based on a mathematical relationship involving a power rule, multi axle trucks would have mass distance charges which increase geometrically in relation to smaller trucks, and such a regime may well encourage trucking businesses to use trucks that are not optimal. For example this could result in a move to use more single trailer articulated trucks rather than B double trucks, and stifle the development of even more productive articulated trucks, like B triples.

Overseas experience

- Australia is not the only country grappling with perceived pricing distortions between competing transport modes and within transport modes. In the European Union, marginal social cost charging (i.e. charging users for the costs [infrastructure, environmental, social etc], both internal and external, they impose at the point of use) has been endorsed as an overarching policy position. However, cost recovery cannot legally exceed infrastructure costs. Europeans acknowledge however that this approach may result in a small change in modal balance and cost

offsets (eg payroll taxes reductions) must be offered if net charges were to increase as a result and threaten overall competitiveness.

Conclusion

- Some degree of government intervention in road and rail is inevitable. At present there are two main areas of influence, being:

  (i) Given the established policy of Australian governments to pursue a user pays / cost recovery system from heavy vehicles for allocated road expenditures, governments impose charges to recover certain infrastructure costs and, desirably, provide funds for investment to meet growing demand for safe and productive roads. This methodology could also be applied to public funds expended on rail infrastructure.

  (ii) To address the externalities associated with the consumption of road and rail freight, government can intervene in a number of ways.

- There is a view that in recovering infrastructure costs and imposing price controls, that government may inadvertently be promoting an anti-competitive environment within those freight markets where road and rail are possible substitutes. Hence, certain stakeholders believe that a third level of government intervention is warranted, being a further form of pricing intervention that ensures that no cross-subsidisation between and across modes occurs and that full user cost recovery occurs against a pre-determined cost model.

- An additional layer of government intervention contradicts the important economic theorem that the free and unhindered operation of markets can lead to the most efficient outcomes. Hence, there is a strong argument that government intervention should be as minimal as possible, and where believed necessary, should be applied using best practice regulatory principles.

- Intervention promoting competitive neutrality was a significant component of Australia's successful microeconomic reform agenda and has had a number of successes. However, the context when competitive neutrality worked successfully is an important consideration. For example, intervention to promote competitive neutrality worked well in instances where public utilities competed with the private sector when both provided a relatively homogenous and highly substitutable product or service in a large market that was responsive to price fluctuations. Large markets that contain a high number of customers all wishing to maximise their utility for a product or service that is highly substitutable fosters competition and promotes incentives to improve and innovate and deliver lower costs.

- The issue is that competitive neutrality in the context of road/rail is very much different and may not deliver the same advantages. This is because road and rail:

  (i) Are freight substitutes in a relatively small market (i.e. only 10% of land freight is considered 'contestable' between road and rail)[1];

  (ii) Are increasingly not providing a highly substitutable and homogenous product or service (for example simply getting product from *x* to *y* is no longer sufficient – value adding is now important); and

  (iii) Price is not the main reason why a freight customer may substitute to an alternative mode.

Hence, competitive neutrality pricing intervention in road/rail may therefore be an ineffective instrument because its potential application will be extremely limited and may increase freight costs to the net disadvantage of the Australian economy.

[1] Issues in current pricing of road and rail freight, Phil Potterton BTRE 2006, presentation to CRAI Seminar 28 April 2006.

- A more viable solution is to:

(i) Exhaust efforts to optimise the functioning of each mode before introducing a further and potentially distortionary further pricing adjustment;
(ii) Limit areas of government intervention;
(iii) Allow competing modes to compete on their individual merits to drive efficiencies;
(iv) Maintain the effort, through the National Transport Commission and the COAG process to advance road and rail regulatory harmonization; and
(v) Increase investment in transport infrastructure.

2. BACKGROUND

The ATA is the peak body of the Australian trucking industry. Its 16 member organisations include state and territory based trucking associations, sectoral trucking associations, national trucking companies, the Transport Workers Union and directly elected owner-driver and small fleet representatives to its General Council.

3. INTRODUCTION

The 'hire and reward' and 'ancillary' trucking industry (excluding storage and logistics) in 2002-03 contributed approximately 3.4% of Australia's GDP. The focus of this submission is in relation to the 'hire and reward' sector of Australian trucking industry – representing those that operate primarily for remuneration and those that perform the critical role of carrying the majority of the road freight task.

The COAG Background Paper: COAG National Competition Policy Review February 2006 states 'that it is important to adopt efficient pricing arrangements for road and rail freight' (p. 19). The paper goes on to say that pricing reform (that 'reflect the costs of providing and using road and rail infrastructure' and are 'consistent and competitively neutral') is needed to:

(i) 'Enhance the efficiency and productivity of the freight transport task';
(ii) 'Enhance the investment choices by governments and the private sector' (by) (directing) infrastructure investment to the most appropriate modes and projects';
(iii) 'Ensure more efficient sharing of the freight task within and across modes which will in turn help to reduce road accidents, greenhouse emissions and noise pollution in urban areas' (pp. 19).

The ATA also believes that the pursuit of these three objectives (and others[2]) should underpin Australia's transport policy. Significantly however, the ATA does not necessarily believe that 'consistent and competitively neutral pricing reform' is the optimal means to achieve these objectives.

Road and rail freight transport systems have fundamental differences, including the length of the respective infrastructure (some 810,000 km of road and 48,000 km of rail) and the number of vehicles involved nationally (some 450,000 heavy trucks and 2,000 locomotives). They also have natural markets determined by the nature of the freight, length of the haul and availability and access to the infrastructure, considerable variation in common use of infrastructure with private and non-freight haulage users and client expectations.

This position is elaborated upon within.

4. WHAT IS THE COMMISSION'S PURVIEW?

The PC is tasked with exploring efficient pricing reforms that are consistent and competitively neutral (CN). Further, the PC defines competitively neutral pricing as an absence of differential subsidies[3] and implies that full user cost recovery is a mechanism by which to ensure that there are no subsidies to either mode or distortions within a mode.

In effect, the task of the PC is to identify optimal full cost pricing models that can be applied consistently to road and rail infrastructure in a manner that maximises net benefits to the community.

[2] Other objectives should include: the most cost effective and efficient transfer of goods from point *x* to *y* given the particular needs of the freight customer; for externalities to be addressed in the most effective and efficient way possible to acceptable levels; for freight markets to work unimpeded to optimise economic efficiencies; and promote sustainable profit margins.
[3] Productivity Commission, Issues Paper, 2006, p. 21.

This in effect is an extremely wide purview as it allows many options, including:

1. Consideration of pricing models that recoup more than just the infrastructure maintenance costs. For example, marginal social cost pricing seeks to 'internalise' ALL the infrastructure (possibly including the full capital value of infrastructure) AND external costs such as accident, environmental and congestion costs (with or without associated tax offsets); or
2. Consideration of pricing models that recoup only the infrastructure construction and maintenance (finance) costs. Within this, there are two broad sub-options including:
    i. Rail adopts a cost recovery system based on the current NTC model of cost allocation and cost recovery for heavy vehicles; or
    ii. Road adapts to a mass-distance charging option as is broadly applied to rail.

The ATA's views on each of these sub-options are below – with particular reference to the potential of each option to enhance efficiency and productivity (of the freight transport task); enhance the investment choices by governments and the private sector; and ensure more efficient sharing of the freight task within and across modes to address externalities.

5. LEARNING FROM OVERSEAS EXPERIENCE

A number of countries, notably within the European Union have, like Australia, also grappled with issues of perceived competitive distortions between competing modes. In response, marginal social cost charging (i.e. charging users for the costs [infrastructure, environmental, social etc], both internal and external, they impose at the point of use) has been endorsed as an overarching policy position. However, countries have utilised a number of different policy instruments (including charging) and have applied varying interpretations in applying this concept (see **Box One**). The reasons why the EU have developed this common position are summarised:

> *A transport undertaking that faces the real costs would have clear incentives to adjust transport choices, for instance:*
> *– Using vehicles that cause less road damage are less polluting and are safer;*
> *– Changing routes and logistics to those with lower levels of road damage, congestion, accident risks, and environmental impacts;*
> *– Or switching to a mode with less impacts*[4]*.*

And

> *The co-ordination of transport charging and the development of efficient charging levels is expected to provide significant net benefits for the whole of society. It should lead directly to improved technological, operational, and organisational efficiency;* ***produce a small desirable change in modal balance,*** *and a small reduction in the growth of demand for mobility. Commission studies also suggest that introducing a policy of marginal social cost charging at EU level would lead to overall welfare benefits of the order of at least 30-80 billion ECU per year (see section 6a)*[5]*.*

[4] White Paper, European Transport Policy for 2010; Time to Decide, 2001, pp. 56

[5] Commission of the European communities Brussels, Proposal for a directive of the European parliament and of the council amending directive 1999/62/ec on the charging of heavy goods vehicles for the use of certain infrastructures, 2003, pp. 45

Box One

Overview of Ways a Number of European countries recover Road Infrastructure Costs

- European Union – Under their Common Transport Policy, charging reflects marginal social costs (i.e. environmental externalities etc); regulation of CO2, HC and PM emissions from diesels vehicles; taxes, tolls and charges on heavy vehicles that are differentiated according to GVM and number of axles and are calculated via electronic km charges; and preference given to pneumatic or equivalent suspension;
- Belgium, Denmark, Germany, Luxembourg, Netherlands and Sweden - have time-based charges (for eg, every 3,6,9,12 months for example) that are scaled according to the damage caused to the environment and road infrastructure and vehicle emission class;
- Germany and the Netherlands – Distance based charge for trucks over 12 tonne on motorways, levied on distance travelled, number of axles and vehicle emission class; and stimulation of clean diesels and biodiesels through lower excise rates; and payment of subsidies to stimulate higher Euro class purchasing;
- Switzerland – distance-based fee of heavy vehicles over 3.5 tonne calculated on 3 parameters (i) km driven, (ii) maximum permitted total weight and (iii) differentiated according to Euro class; and subsidies/tax exemptions for low and/or zero emission vehicle implemented in conjunction with strategies to provide cross-Swiss rail-freight alternatives; and
- UK – distance based charging calculated on vehicle type, emissions, axle number, weight etc

(Source: Incentives In Action, Analysis of the role of incentives in road transport, Scientific Study, International Road Transport Union, 2004)

It should be noted that European law does not allow Member States to levy road charges above the level of infrastructure costs, stating:

> *…with due regard for the subsidiarity principle, to give economic incentives to transport in the form of a price structure that better reflects the costs to society. It is not so much the level of charges on transport as the structure of the charges and the manner in which they are applied to the various categories of user that need to change. Infrastructure fees offer the possibility of greater differentiation by vehicle type, time and place, and hence of more accurately reflecting costs in different situations without increasing the overall burden of taxes and fees in the road sector*[6]*.*

And

> *Contrary to popular thinking, such integration would not work against European competitiveness. It is not so much the overall level of taxes that needs to change significantly, but rather their structure, which needs to be altered radically to integrate external and infrastructure costs into the price of transport. If some Member States wanted to raise the overall level of transport taxes, this policy could, as Mr Costa underlined, be 'designed in such a way as to avoid a net increase in taxation (including charges) in the economy as a whole', for instance by offsetting any increase in infrastructure charges by lowering existing taxes, such as taxes on labour, or by allocating revenue to the financing of infrastructure*[7]*.*

[6] White Paper, European Transport Policy for 2010; Time to Decide, 2001, pp. 76
[7] White Paper, European Transport Policy for 2010; Time to Decide, 2001, pp. 75

The implications for Australia of the European experience is significant, because:

- Whilst social marginal cost charging is supported, current policy settings in the EU only partly comply with the principle – with costs recovered, with increasing variability, against a fixed infrastructure expenditure amount. This sends a very strong message that the EU is concerned about increasing the net level of taxes payable by industry for fear of violating overall domestic and international competitiveness and that increasing the net costs onto a mode with a view to decreasing output and hence levels of externalities is misguided;
- If net charges to industry were to occur as a result of pricing reform, then offsets in other areas must occur; and
- More efficient charging levels may only create a small change in modal balance.

Additionally, it is critical to note that mass distance charging system proposed or already introduced into European countries (including Great Britain) are designed to address the problem that transiting and visiting trucks, as well as domestically registered trucks, do not purchase fuel within the transited country and thus pay no excise duty on fuel, and may not pay registration charges either. Unlike Australia, which has no physical contact by land with any of its neighbours, this revenue loss is significant for European countries, and is only partly offset by the services offered by transiting and visiting trucking fleets in providing freight services in that country, and is consequently a driver for heavy vehicle charging reform.

6. OVERVIEW OF POSSIBLE PRICING MODELS AND THEIR POTENTIAL EFFECTIVENESS

6.1 FULL COST PRICING (THAT RECOUPS INFRASTRUCTURE AND BROADER EXTERNALITY COSTS)

Many past government and independent studies have examined the issue of competitive neutrality between road and rail.

Significantly, a common finding is that a consistent approach to road/rail taxes and charges would, if feasible, only constitute part of the solution. As Webb[8] describes:

> *Finally it should be remembered that taxes and charges are only one aspect of government policies affecting competitive neutrality between rail and road transport. Other areas are infrastructure investment arrangements, access regimes, safety regulation and operating procedures and standards. Indeed, some of these areas, particularly infrastructure funding and investment arrangements, may be more important than charges and taxes in trying to attain competitive neutrality. Competitive neutrality of charges and taxes alone would, therefore, still not resolve the issue of whether government policies advantage or disadvantage one mode relative to the other.*

However, pricing forms a large part of the Commission's Inquiry and will be the focus of this discussion.

Webb, significantly, also states that: 'The main changes needed to attain competitive neutrality are to impose charges on heavy vehicles that more fully reflect the cost of their use of roads, and to ensure that both rail and road face the full cost of externalities, with road in particular having to pay more.'[9]

[8] Cost Recovery in Road and Rail Transport, pp. 1, 2000
[9] Ibid p. 3

This narrow view of competitive neutrality is also supported by the Bureau of Transport Economics who state that 'the main reforms needed to achieve the competitively neutral scenario are to impose charges on heavy vehicles that more fully reflect the cost of heavy vehicle road use, and ensuring that both road and rail operators face the full cost of all externalities'[10].

It is the reference to full externality costing that becomes a problematic notion. Prima facie this may seem an attractive path to take as it would theoretically promote competitive neutrality (i.e. it ensures the complete standardisation of pricing methodology) AND promote a more efficient allocation of resources by users, because of the externalities that exist. In practice however, the practical consequences may be quite different and may do neither well and may breach what should be the foremost policy objective - which is to introduce polices that 'maximise net benefits'.

Taxes and charges in the broader road transport sector have generally been levied just to raise additional government revenues and not used as policy instruments. However, it is important to note that the current approach to heavy vehicle charging is a policy instrument and results in the return or rebate of excise, additional to that which is needed to meet the costs allocated to heavy vehicles by the NTC process and approved by Australian Transport Council ministers, returned to trucking operators as the diesel on-road grant.

This amount is currently 18.51 cents per litre, which leaves 19.633 cents per litre with the Australian government as net diesel excise. It is to be noted that the full amount of diesel excise is rebated to rail operators since the commencement of the New Tax System from 1 July 2000. Commentary at the time of the implementation of this policy claimed that this differential excise arrangement between road and rail would assist in addressing competitive neutrality arrangements between the modes rather than view it as a differential subsidy.

It is generally accepted that achieving economic efficiency should be the over-arching objective of government. For an economic system to be efficient, it is necessary that whatever goods and services are produced, that:

- They are produced at minimum cost; and
- They are consistent with consumer preferences as reflected by expenditure; and
- They are distributed among consumers in accordance with effective demand.

This however assumes that 'effective demand' levels take into account marginal social costs – thereby promoting efficient resource allocation. The reality is that *laissez-faire* markets at times fail to take into account these social costs, and externality costs are said to occur. Since government cannot eliminate externality costs entirely, its task is to help the private sector achieve the socially efficient level of externality, to make individuals and firms act in such a way that they are induced to take into account the effects of their actions on others. There are a number of ways governments can intervene to reduce externalities and promote efficiencies, including:

(1) Use input regulations such as Australian Design Rules for motor vehicles, that prescribe maximum allowable emission levels from new heavy vehicle engines;
(2) Use recently enacted national fuel standards to reduce pollutants in fuels
(3) Use corrective taxes to ensure that prices reflect all costs inclusive of externalities;
(4) Establishing markets that internalise all impacts;
(5) Subsidies; and
(6) Property rights

(6) Propertyrights

The percentage of emissions from each vehicle category is provided at **Table Two.**

Table Two

Percentage of Emissions from each Vehicle Category - 2010

Vehicle Category	Year 2010			
	CO	NOx	HC	PM
Passenger	79.3	54.2	67.4	36.9
Light Commercial	14.2	13.8	14	17.2
Rigid Truck	2.5	15.7	12.2	31.7
Articulated Truck	0.8	10.7	1.7	8.3
Bus	0.4	5.2	1.9	4.6
Motorcycle	2.8	0.4	2.8	1.4
Total	100	100	100	100

(Source: Fuel Quality and Vehicle Emissions Standards Cost Benefit Analysis prepared for MVEC Review of Vehicle Emissions and Fuel Standards post 2006 by Coffey Geosciences Pty Ltd October 2003)

Considering the percentage relative contribution of rigid and articulated trucks to the share of major pollutants for major city airsheds in 2010, it is minimal. For example, trucks contribute only 3.3% of total transport carbon monoxide emissions. Extrapolated to a percentage share of carbon monoxide pollution in the Sydney-Newcastle-Wollongong airshed, trucks contribute only 2% of the problem. Yet, trucks have the highest ADR requirements relative to any other transport vehicle type in Australia (i.e. will go to Euro 4 [ADR 80/01] in 2007/08 and Euro 5 [ADR 80/02] in 2010/11) and given the significant operability trade-offs that will be associated (i.e. worse fuel efficiency, US>$10,000 higher purchase costs etc), it is probable to assume that the industry is incurring costs that are more than commensurate to its contribution to the pollution problem.

As suggested, there is an optimal level of externality. In relation to transport environmental externalities, an optimal level is determined by the Ambient National Environment Protection Measure for Air Quality Standards and prescribe maximum ambient concentrations for a number of air pollutants. It is assumed that if each emitting sector was to reach a target of pollutant abatement (commensurate to their contribution) and as determined by the NEPM concentrations, then industries would be reaching an efficient level of abatement. It is suggested that the trucking industry is achieving far more abatement than is its fair share of the problem and is thus at a competitive disadvantage to other competing modes. In effect, and through the application of input regulations, the environmental externalities are being internalised via higher costs also.

Greenhouse Gases

The BTRE at Table Three estimates the greenhouse gas emissions from all Australian civil domestic transport sectors.

Table Three

Projected Increases in Greenhouse Gas Emissions from Australian Civil Domestic Transport – End

(Gigagrams of direct CO_2 equivalent)

Sub-sector	1990 (Gg)	1998 (Gg)	2010 (Gg)	2020 (Gg)	Percentage Change 1990–2010	Percentage Change 1990–2010
Cars	34 220	39 170	47 792	50 110	40%	46%
Trucks	9 924	11 779	14 606	17 443	47%	76%
LCVs	7 397	8 489	11 547	14 431	56%	95%
Aviation	2 565	4 846	7 792	11 922	204%	365%
Other	5 569	5 329	5 700	6 303	2%	13%
Total	59 676	69 612	87 437	100 208	47%	68%

(Source: Greenhouse Gas Emissions from Transport, BTRE, Report 107, 2002, p. 4)

Given that a gigagram equals 1000 tonnes, trucks in 2010 are expected to account for approximately 17% of transport emissions and assuming that total emissions in 2010 is equivalent to 585 Mt CO2-e[16] - then trucks account for approximately 3.3% of total greenhouse gas emissions.

The Greenhouse Challenge Scheme has been in place for a decade, and has attracted considerable participation from the trucking industry. In fact road transport has the second highest participation rate of all Australian industries in the program. From 1 July 2006, under the proposed Fuel Tax Credits Scheme, trucking businesses in receipt of more than $3m of fuel tax credits per annum will have to participate in the Greenhouse Challenge program, and the program of energy reporting required under the Energy Efficiencies Opportunities Act if they consume more than 0.5 petajoules of energy per annum. These mandatory arrangements complement the natural focus within trucking businesses on efficient energy usage, and therefore abatement of greenhouse and pollutant gas outputs. These matters were addressed by the ATA in its submission and evidence to the Productivity Commission Inquiry into Energy Efficiency.[17]

Table Four represents the cost structure of a typical owner/driver operation that undertakes predominantly long distance tasks, and is operating a relatively modern heavy vehicle. Significantly, 93% of businesses in the hire and reward industry are 'small' in their operating size having on average 1-4 trucks in their fleet. [18] With fuel representing the largest individual cost input, for many operators, a very strong market or commercial incentive exists to maximise fuel efficiency and/or to lower this cost value in a very competitive market. The implication is that government intervention via externality charging or trading for example that creates a price signal may do little, and in the absence of other government reforms (for example, allow higher mass limits), to reduce fuel usage (by way of reduced demand for road freight – see price elasticities discussion above) and/or improve fuel efficiency because supply side technological frontiers (i.e. fuel and engine technologies) have been pushed and no strong substitutes to diesel exist.

[16] Tracking to the Kyoto Target, 2005, p. 4
[17] Energy Efficiency, Productivity Commission, April 2005, pp.224-5.
[18] Trucking – Driving Australia's Growth and Prosperity, August 2004, p. 7

Table Four
Cost Structure of Owner/Driver

Insurance	6%
Overheads including road user and registration charges	12%
Capital	16%
Labour	24%
Repairs and Tyres	12%
Fuel	30%

The ATA strongly believes that addressing greenhouse gas emission externalities as a result of trucking is best addressed by demand-side policies that promote the utilization of more productive and efficient heavy vehicle combinations. Pricing can be an integral part of this. For example, the fuel efficiency gained by a B double articulated truck over a single trailer articulated truck is 1.6:2 and this can be further extended by the introduction of more productive vehicles such as B triples within or outside the PBS/SMART vehicle framework being developed by the National Transport Commission.

Further, the ATA would strongly resist on equity grounds attempts to impose a greenhouse gas externality charge on trucking when other larger emitting sectors, both in industry and private areas such as car usage, of the Australian economy face no similar charges and where a charge would be more effective as a policy instrument to induce supply and demand side efficiencies.

If greenhouse gas externality charges were pursued as the optimal means to improve resource allocations and promote competitive neutrality then one must decide on the right charge per unit of CO2-e emitted. This is very difficult given the uncertainty associated with estimating both potential climate change and the costs associated with ameliorating or adapting to this change.

It is noted that the inclusion of a greenhouse gas externality charge for road freight in the *Future of Freight* report prepared by Port Jackson Partners for the Australasian Railways Association, is a key element of their claim that rail is a more cost efficient mode than road freight transport. This, and other pre-requirements and assumptions to make the claim of greater cost efficiency for rail freight are critically examined in the report prepared for the NTC by Maunsell (February 2006)[19]. Apart from its general conclusions, the report makes clear the vital necessity of consistent and robust research on these matters in the development of and prior to the consideration of any changed pricing options.

It should be noted also that new diesel engine emision standards for heavy vehicles will in all probability accrue net fuel efficiency penalties for users. As stated, the Australian Government has introduced

[19] Freight and Mode Share Forecasts. A Review of "The Future of Freight", Maunsell Australia Pty Ltd, March 2006.

Australian Design Rules ADR 80/01 (Euro 4 and US and Japanese equivalent), and ADR 80/02 (Euro 5 and US and Japanese equivalent), for implementation in Australia in 2007/08 and 2010/11 respectively. Governing the allowable emissions (i.e air pollutants only, not CO_2) of heavy truck engines sold in Australia (all of which are imported), these engines will be less fuel efficient than their Euro 3 (ADR 80/00) predecessors.

Assessing the impact of meeting the Euro 5 standard for heavy diesel engines from 2010/11 is where attention needs to be. Indications are that heavy vehicle engine and truck manufacturers will favour selective catalytic reduction (SCR) technology to meet this standard. This technology, in achieving a further reduction in NOx (see **Table Five** below), is expected to accrue a 0 - 6% fuel efficiency penalty compared to today's Euro 3 (and US and Japanese equivalent) engines. Coupled with higher purchase costs in the vicinity of >US$10,000, and other operability concerns associated with heat rejection and urea cost, supply and distribition, this transition is not highly anticipated by operators.

The implication is that the industry cannot incur charges for greenhouse gas externalities when more discrete government policy is mandating measures for the industry to address this externality.

Table Five

Australian Heavy Vehicle Emission Standards

Euro Standards				
	Reductions in Air Pollutants			
Euro (and US and Japanese Equivalent) Standard	Nitrogen Oxide (NOx)	Carbon Monoxide (CO)	Hydrocarbons (HC)	Particles
(ADR 70/00) Euro 1 1995/96	8	4.5	1.1	0.39
(ADR 80/00) Euro 3 2002/03	5	2.1	0.66	0.1
(ADR 80/01) Euro 4 2007/08	3.5	1.5	0.46	0.02
(ADR 80/02) Euro 5 2010/11	2	0.46	0.46	0.02
Values in g/kWh				

An examination of greenhouse issues demonstrates that externality charging is likely to be an ineffective mechanism to address these externalities, and if used to promote competitive neutrality, then doubts remain as to what the correct charge would be.

Also a competitive neutrality approach would have to take cognizance of the fact that there are no regulated emission standards for heavy diesel engines used in new rail locomotives, nor a requirement that they use automotive diesel, which must achieve a national standard for sulphur levels. Further to this, and from 1 July 2006, owners of heavy trucks manufactured prior to 1 January 2006, with diesel engines, will have to meet certain emission standards in order to receive their fuel tax credits. Fuel tax credits paid to rail operators will have no such requirement, which would have to be addressed to achieve competitive neutrality. The most appropriate standards for diesel fuel used in such locomotives would also have to be considered.

Congestion

It is noted that the COAG communiqué of 10 February 2006 announced a review, oversighted by a joint Commonwealth, state and local government steering committee, to develop policies to "reduce current and projected urban transport congestion, within current jurisdictional responsibilities, informed by a review into the main causes, trends, impacts and options for managing congestion focusing on national freight corridors." As further details of this review have not been announced at this time, we believe that the PC Inquiry should not anticipate or duplicate the efforts of this review in their inquiry.

It would be expected by the ATA that any review would conduct analysis that addressed the contribution of all road users and the limitations of infrastructure to congestion in freight corridors.

Noise

Whilst the extent of community complaint and the associated external costs (reduction in property values, public amenity, health impacts etc) associated with motor vehicle noise pollution remains unclear, it would appear from the myriad of government responses to the issue that it is a source of community concern. Instruments utilised by government include:

(i) Building roadside barriers to prevent noise reaching homes;
(ii) Reducing demand for vehicle use;
(iii) Designt is a source of
community concern. Instruments utilised by government include:

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community concern. Instruments utilised by government include:

(i) Building roadside barriers to prevent noise reaching homes;
(ii) Reducing demand for vehicle use;
(iii) Designt is a source of
community concern. Instruments utilised by government include:

- 53% of diesel is used by on-road vehicles, and
- 84% of diesel is used by road transport vehicles included with the ambit of the NTC's road pricing arrangements

Or, some 6,438 million litres are covered generating some $1,287 million in 2003/04 or some $1,346 million in 2005/06 prices (the CPI index moved from 143.5 to 150.0).

Registration Revenue

Based on the NTC estimates, we estimate heavy vehicle registration revenue of $548 million per annum.[25]

Total comparison

In summary, based on 2003/04 activity levels and in 2005/06 prices we estimate

Revenue:

Fuel charges	$1,346 million per annum
Registration charges	$ 548 million per annum
Total	$1,894 million per annum

Costs

Road transport road construction and road maintenance costs $1,620 million.

Conclusion

Heavy vehicles are currently over recovered $274 million per annum based on current charge levels.

6.2.3 Mass-Distance Based Charging

6.2.3.1 Introduction

At its most basic level, mass distance charging takes account of the mass of a vehicle and the distance it has travelled to produce a charge for using the roads for that trip. That is also what trucking operators do, or would like to do, when setting a charge to carry freight from A to B. However the freight charge is influenced by the market, whereas the mass distance charge would be consistent across the road network, at least for the same classes of roads. Locational charging would add extra layers of sophistication which would allow other metrics, other than just mass and distance, to be incorporated into the charging model i.e. congestion, emissions, road surface quality and bridge use. Locational charging would require telematics technology to at least gather the data on vehicle location and time in that location, and could be used to collect data on distance and mass. Telematics could also be used to

[25] Heavy Vehicle Charges, Draft Regulatory Impact Statement, NTC October 2005 Table 21 p. 47.

collect charges, possibly in real time in a manner similar to current eTolling arrangements on urban tollways.

The case to apply this simple mass distance logic to truck charges is appealing to some policy makers, but begs many questions. They include:

- Should one charge for road use at all? i.e. are roads provided, completely or partially, by governments as a service?
- If "user pays" is to be applied to roads, should all road users pay?
- What should they pay for? (What expenditures are allocable?)
- How much should they pay? (i.e. how are costs allocated?)
- How should they pay?
- Who should they pay and what should the charges be used for? and
- Are mass and distance the best or the only measurements that should be used?

6.2.3.2 Mass distance parameters in the current NTC charging model.

The current NTC heavy vehicle process has the following characteristics:

1. A set of principles is endorsed by Australian Transport Council ministers, which guide the process.
2. It takes account of all expenditure on public roads (toll roads are excluded as they have their own, direct, individual user pays system – tolls, which directly reflect usage. The tolls may or may not be graduated to reflect vehicle size, mass, and distance travelled. For example, the M7 in Western Sydney has a standard toll for all vehicles but varies with distance travelled; other toll roads have graduated tolls based on vehicle size but do not vary the toll for distance travelled)
3. It quarantines expenditures on the local road network, which are for access only.
4. It divides the expenditures between those that are "allocable" to vehicles (i.e. related to their use of the public road network) and "unallocable" expenditures (e.g. grass mowing, tree planting, sound barriers etc)
5. It uses a range of expenditure allocation parameters to allocate values to categories of vehicles, including light, privately owned vehicles. These include Vehicle Kilometres Travelled (VKT), Passenger Car Units (PCU), Average Gross Mass (AGM), Equivalent Standard Axle Load (ESAL) etc
6. Within the heavy vehicle classes (i.e. greater than 4.5 tonnes GVM) the average distance (VKT) of each category and the average mass (AGM) of vehicles in that category are as used, amongst others, as allocation parameters for allocable road expenditure.
7. The quantum of road expenditure allocated to each vehicle class is converted into charges
8. The two current elements of the charges are vehicle registration and net diesel excise, although the level of costs allocated and charges can be influenced by the agreed, over-arching principles.

Although mass and distance are taken account of in the current system, it is on an averaged and aggregated basis and is only as part of the cost allocation process.

6.2.3.3 The current mass distance charging debate

The Australasian Railway Association has argued that as rail has mass distance charging, so should road freight transport. This simplistic argument does not recognise that rail charges are commercially based and are the subject of commercial arrangements (including discounts). There are no standard or nationally uniform rail charges and no transparency, particularly in vertically integrated operations. The ACCC addresses macro issues of rail access, pricing caps, market power and competition on networks,

which are owned privately or by governments. So the rail claim that they have mass distance charging adds no precision or insights into the issue for road freight charging.

The NTC have made it clear that they wish to see a move to direct, variable charging in which mass and distance would be key, if not the sole measurements. Such a system, they argue, is now possible given the development and feasibility of GPS/IAP technology. A more sophisticated measurement of mass would be "dynamic" mass, rather than mass based on an average across a class of trucks. (i.e. real time mass measured by an onboard measurement device, the data of which would be stored on board and could be transmitted to a charging authority in real time).

If location and time were also able to be established, then charges could reflect the quality of the road being travelled and thus reflect road wear. If time were available, and linked with location, then the congestion levels of the road network and air quality of air (i.e. pollution) could be taken into account and charged for as well.

Scenario 1

If the current cost allocation system was retained, one could use Mass Distance charging to recover the $1.62 bn allocated by the NTC in the 3rd Heavy Vehicle charges determination to heavy vehicles for their share of road expenditure. If a mass distance charging approach was used, without any increase in allocated expenditure, trucks, collectively, would not pay any more than they are required to pay under the current system, and it is possible that categories of trucks, or trucks individually would not pay any more than current charges, but the charge would be collected as a single mass distance charge, not through registration charges and net diesel excise. The money would be collected centrally and could be distributed to road agencies on agreed basis to reflect road usage in their jurisdiction. This would be very difficult to achieve, given the fiscal and institutional reforms that would be required.

However given the length of road networks in low activity jurisdictions, it is unlikely that this revenue, solely from heavy vehicles, would be sufficient to develop and maintain the road network. Other funds, which acknowledge road use by light vehicles, would also have to be made available. And by whom? And on what basis?

Scenario 2

If the cost base was changed to an approach where engineering formulae were used to measure pavement interaction with heavy vehicles, then the total cost imposed on heavy vehicles, and applied to particular vehicle types, would almost inevitably be greater. If this was directly converted into a charge the charges would therefore also be greater than the current arrangements. This would lead to even greater over-recovery than currently exists.

Scenario 3

Finally, if external costs (emissions, safety, congestion etc) were attributed to heavy vehicles, in addition to either of the above scenarios, and especially scenario 2, then charges would greatly increase.

Thus any new heavy vehicle charging system, as is the case with the current heavy vehicle charging system, must be given a reality check against a set of wise transport policy principles, including a rigorous cost benefit analysis, otherwise there would be wider impacts and the Australian economy severely impacted upon.

6.2.3.5 The technological link

The full implications of such a high tech charging system, based on telematics (GPS based truck mounted systems) would make these measurements in real time – and charges would be levied in real time, so as a truck travelled with X weight on Y road at Z time, money would be transferred electronically from a nominated account to the charging agency, and would vary as these parameters varied e.g. moving into a more/less sensitive road surface, crossing a bridge, loading/unloading 5 tonnes, entering a congested road system etc. It could even include speeding fines if a truck exceeded the speed limit, or regulated hours of driving, or fines if the truck departed from the approved route (for restricted access trucks e.g. Higher Mass Limits or PBS).

The COAG brief places a number of caveats on any proposals for a mass distance charging system, but stops short of addressing the fundamental question of inter-government fiscal implications. Would the states be prepared to abandon the current registration charges and the Commonwealth a net excise on heavy vehicle fuels to clear the decks for a direct and variable mass distance charge? Who would collect the charges and how would they be distributed? If these questions cannot be addressed, the ATA believes that the Productivity Commission cannot significantly explore this area.

6.2.3.6 The ATA position

- The ATA is prepared to assess any detailed proposals for mass distance charging developed during the COAG process including a benefit cost analysis.

- The ATA harbours deep reservations about the use of telematics systems to collect information to determine charges and the use of such systems to collect such charges, as the IAP has not been implemented in Australia and the costs to industry and government and technological reliability are not known.

7. THE ECONOMIC IMPACTS OF PRICING REFORM

7.1 OF FULL COST PRICING

The economic impact of full cost (i.e. infrastructure and all other externalities) pricing would be profound.

Australian Governments have a long-standing policy of fully recouping road infrastructure costs – especially from heavy vehicle users. The NRTC/NTC 1st, 2nd and 3rd Heavy Vehicles Charges Determination processes have produced relatively consistent outcomes in terms of pricing and outcomes on heavy vehicle classes and the road user charges and registration costs have become a long factored business input cost. The ability of the 'hire and reward' trucking sector, because it is close to 'perfectly competitive'[26] in its market structure with demand dictating the price for freight services, to pass on these higher costs, and other costs, has varied over time.

[26] It is estimated that 92% of operators have 1,2,3 or 4 heavy vehicles in their fleet - meaning there is a predominance of small businesses. Very low barriers to entry, an inability to create scale, a homogenous service, and general high contestability has led to a situation (Trucking, Driving Australia's Growth & Prosperity, August 2004, ACIL Tasman).

Labour productivity and multifactor productivity increased through most of the last three decades[27]. In the 1990s for example, labour productivity increased at an average rate of 2.84% per year and multifactor productivity increased at an average rate of 1.98% per year. It should be noted that these increases were, in the main, due to the mainstream introduction of larger combination vehicles during this time. Reflecting the highly competitive nature of the industry, the profitability associated with the utilisation of more productive vehicles was typically 'given back' to consumers. This is confirmed by ACIL Tasman who have calculated that real road freight rates have almost halved over the past 35 years[28] as reductions in real freight rates.

The significant issue is that there is unlikely to be 'silver bullet' productivity gain for road freight transport, such as the introduction of B-Doubles, in the foreseeable future. As the BTRE state, 'the limited evidence available suggests that there is a possibility that improvement in the total factor productivity in the road freight sector may have slowed down'[29]. Whilst the need for productivity reform has been given emphasis by the COAG and the National Transport Commission, significant inroads from pricing reform, or other supply and demand side reforms are unlikely.

Reflecting this 'stagnation' of (productivity) reform and the significant impact of rising oil prices, heavy vehicle operators earn profit margins that are (on average) lower than Australian industry standards. The Australian Bureau of Statistics estimates that the Australian industry average profit margin (i.e. for all industries) was 7.2% in 2002-03[30]. This compares to the 'Transport and Storage' industry whose profit margin in 2002-03 was estimated to be 5.6%, decreasing from 6.4% in 2001-02[31]. This 13% decrease in profit margin between 2003 and 2002 is against the backdrop of an approximate 21% increase in diesel 'burn prices[32]' over this time.

The inability of the industry to pass costs on is demonstrated at Graph Two. Using ABS Producer Prices Indices for 'petroleum and coal products' and 'road transport freight rates' it is possible to calculate the percentage increases and decreases in these prices each quarter between March 1997 and September 2005. Graph Two demonstrates the extreme variance in the price of petroleum products over this period (both up and down) and the relative stability of freight rates.

[27] BTRE 2003a pp. 69

[28] ACIL Tasman (2003) using data from the Bureau of Transport and Regional Economics, Freight rates in Australia, Information sheet 19.

[29] Working Paper 60, 2004, pp.18.

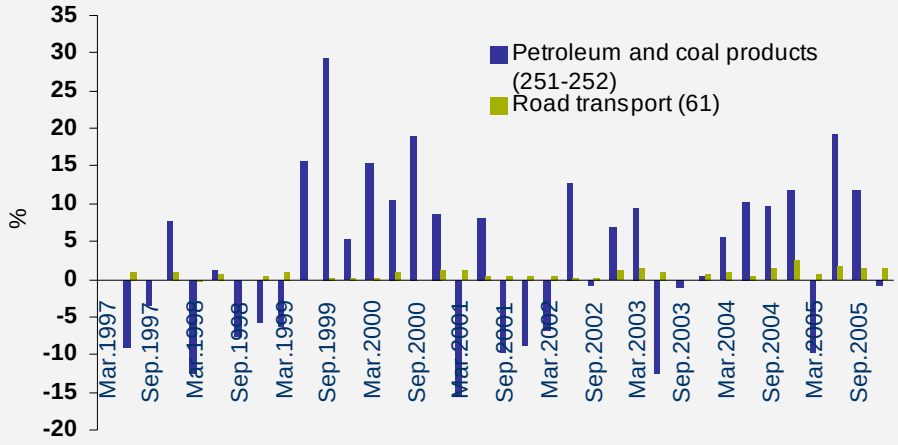
[30] Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03

[31] Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03

[32] The price after the grant and GST is claimed.

Graph Two

Percentage Changes in Petroleum and Coal Products and Road Transport Freight Rates March 1997 and September 2005



(Source: 6427.0 - Producer Price Indexes, Australia, Dec 2005)

This situation raises many issues in the context of road/rail pricing reform. Firstly, with profit margins so low, increases in prices from the introduction of full cost recovery (with no tax offsets on other areas – for example payroll tax) would necessitate costs being passed on. However, freight markets are slow to respond to price adjustments and it would be very probable that a number of trucking businesses would not be able to remain viable. If costs can only be partially passed on, the following outcomes are likely:

- An inability to expand the business and employ more staff – thereby mitigating efforts to develop economies of scale and scope and increase profitability and preventing investment in more modern and productive equipment. This is significant because not only does this detract from profitability, but more modern prime movers and trailers are considered to be safer and more environmentally friendly than equipment manufactured earlier;
- An inability to pay competitive wages to retain and develop staff; and
- Performance standards being compromised.

If cost could be passed on in full, the consequences would be significant. Whilst there is a lack of formal macroeconomic/general equilibrium modelling in the public domain to verify the impact on important macro indicators such as consumption, exports, investment and overall GDP that may arise following a transport 'price shock', it is intuitive to state that the Australian economy is dependent upon low transport costs given its significant geographical dispersion, export orientation, relative 'smallness' compared to competing international economies, and high 'other' input costs such as labour.

The BTRE state[33]:

[33] Competitive Neutrality between Road and Rail, BTRE, Working Paper 40 (p. 30, 1999)

Introduction of the competitively neutral scenario[34], given ANTS, would see both road and rail input costs and charges rise relative to the current post-ANTS scenario — road by 12 per cent and rail by 4 per cent.

Assuming that a 12 percent increase in road input costs and charges is still relevant today under a full cost recovery model, it is possible to calculate the likely impact in terms of changes in the quantity of road freight demanded and the amount of substitution to rail that may occur.

The Australian Bureau of Statistics in 2003 estimated that Australia's truck fleet transported 1,549 million tonnes of freight[35]. Assuming that road freight volumes grow 1.5 times greater than GDP (approximately 3.5%) per annum, then the road freight task in 2006 would be approximately 1806 million tonnes of freight. Assuming that the coefficient of price elasticity of road freight demand on a line haul inter capital city route is -0.9[36] one can calculate the percentage change in the quantity of road freight demanded as a result of a 12% increase in road freight charges, identified in BTRE Working Paper 40.

It is important to note that although the BTRE analysis has been used as the basis for this submission, work completed by Tasman Asia Pacific in fact found that to achieve competitive neutrality in the New Tax System environment from 21 July 2000, there should be a reduction of road freight rates, on the BTREs "representative" freight routes, by 0.5 % and an increase of 6.9% in rail freight rates.[37]

Assuming that the average road freight rate in 2006 was $1.65 per km, then a 12% increase would see the rate increase to $1.85 per km.

If the price elasticity of road freight demand is –0.9, then this 12% increase would lead to an approximate 10.8% decrease in road freight quantity demanded. Reasons for an inelastic road freight demand coefficient are outlined by Starrs[38]:

- *Supply chain management changes have favoured road transport because of its flexibility and ability to handle small shipment sizes;*
- *Service level is more important relative to price due in part to these changes. For some users price is the main determinant of the mode choice decision and they are more likely to use rail, but these users are in the minority.*

The Productivity Commission share a similar view[39]:

The potential for modal substitution depends largely on the responsiveness of transport customers to:

- *Prices (freight rates or passenger fares); and*
- *Service characteristics (such as punctuality, reliability, frequency, transit times and the capacity to carry specific commodities.*
- *In turn, prices and service characteristics are influenced by a number of factors including managerial decisions, technological developments, competitive pressures as well as government policies.*

34 Defined as a scenario that promotes the economically efficient allocation of resources via the imposition of charges on heavy vehicles that more fully reflect the cost of heavy vehicle road use, and ensuring that both road and rail operators face the full cost of externalities.
35 Australian Bureau of Statistics, 2003, Survey of Motor Vehicle Use – data cube ABS Catalogue No. 9210.0.55.001
36 Effect of Truck Charges on Rail, Starrs, 2005
37 Competitively Neutral Freight Rates for Road and Rail, Tasman Asia Pacific, (2000)
38 Effect of Truck Charges on Rail, Starrs, 2005
39 Progress in Rail Reform Productivity Commission, 1999 Chapter 10

In absolute terms, this inelasticity would equate to an approximate 195 million tonnes reduction in freight being demanded as a result of the increase in road freight prices.

It is important to ascertain whether customers in this situation would substitute to rail or some other mode or if they would opt to not demand the road freight services at all.

Starrs states that the cross price elasticity of demand between road and rail, or how the demand rail is affected by changes in the price of road, on long haul corridors is 0.61[40]. This would indicate that road and rail are substitutes to a slight degree. However, it must be noted that this substitution would be very minimal in absolute tonnages as only 10-20% (assumed to be 15% for these purposes) of land freight is estimated to be contestable between road and rail.

In those markets where there is true road/rail contestability, and for these purposes, it is assumed that demand for rail increases by 50% in that 15% of the market where there is true contestability as a result of the 12% increase in road freight rates. In percentage terms, this means that approximately 7.5% of the 195 million tonnes no longer demanded from road may be substituted to rail. In tonnage terms, this equates to 14.625 million tonnes. Given the system and other constraints within the rail sector at present, one would have to question the ability of the rail sector to meet this increased demand. The positive however is that this substitution still allows Australian producers to still sell their goods and services at prices demanded of their markets.

The other side of the equation is that, and assuming that rail can meet this hypothetical increase in demand, 180.375 million tonnes of freight is not demanded at all. This quantity would be higher if rail is unable to expand to meet the freight that is substituted. The financial impact on Australian industry and the broader community would be significant – for example, and assuming that each tonne of freight is valued at approximately $50/t, then approximately $9 billion of goods (i.e. 180.375 million tonnes times $50/t) and services LESS would be supplied and demanded per annum.

7.2 OF INFRASTRUCTURE PRICING

The economic impact of the introduction of a pricing regime that takes into account infrastructure costs only (e.g. averaging or mass-distance based charging) that does not allow cross-subsidisation between vehicle classes (i.e. as per the NTC's current cost allocation and cost recovery charges process) could also be significant.

A rationale for supporting pricing reform in the provision and pricing of road services is to unlock unrealised economy wide productivity gains KPMG offer a view as to how this could be achieved:

> *The two-part charging approach of fixed registration charge and variable fuel charge does not have the flexibility to provide users with signals to encourage efficient transport network usage. Nor does it have the flexibility to accurately promote or capture efficient demand signals. For example, prices do not differ according to the choices made by vehicle operators to make use of certain routes. As a result there is no incentive for operators to utilise higher quality roads built to withstand higher load and frequency of use, thereby minimising costs of wear and tear Furthermore, there is no economic incentive for road owners and operators to prioritise investment in those parts of the roads network that will best meet demand and provide the greatest economic benefit[41].*

This view is supported by the ISC who state:

[40] Effect of Truck Charges on Rail, Starrs, 2005

[41] National Transport Commission, 4th Heavy Vehicle Road Use, Pricing Determination Scoping Study, Directions Paper, 2006, pp.28.

Efficient direct charging would provide these signals and could very well lead to higher quality roads and higher mass limits[42].

Whilst the ATA fully supports reforms that unlock productivity gains, we are sceptical as to whether pricing reform would have the capacity to send pricing messages or signals that would create discernable changes in behaviour. For example, on many routes there is simply no alternative route that can be taken, and it may not be necessary to establish an elaborate variable charging model that uses prices and therefore the market to facilitate informed decision making and optimal transport systems. The current NTC model addresses considerable data sets, which could be improved to better inform investment decisions, which could be assessed against agreed national guidelines, such as those endorsed by the COAG communiqué.

A reduction in total factor productivity would result in:

- Higher transport costs;
- Lowered profitability;
- More trucks on the roads – having a negative impact on safety and the environment.

At present, under the current NTC heavy vehicle charging model, B double class of combinations are under-recovered by 9% of the costs allocated to them[43]. The quantum of this under recovery is about $21 m per annum in total heavy vehicle cost recovery of a projected $1,339 m p.a. (i.e. 1.56%) which includes total over recovery of $108 m per annum. The ATA supports this approach as the industry as a whole 'still pays it way'. In effect, this type of under-recovery represents sound policy as it is also a rudimentary form of externality charging (because B-Doubles on average carry approximately 50% more mass than a single trailer articulated combination with an approximate 30% fuel efficiency advantage[44]), and given the inherent supply constraints of rail, and the critical shortage of heavy vehicle drivers and diesel mechanics, transport policy must place an emphasis on promoting these high productivity combinations and higher mass limits.

A useful analysis of the productivity and cost benefits of larger combination vehicles is the work completed by the American Transportation Research Institute in conjunction with Cummins[45]. The results demonstrated that the heavier the truck, the better it is on effective fuel economy (litres / tonne / kilometre) and emissions.

The study looked at vehicles with 80,000 (36 tonnes), 100,000 (45 tonnes), 120,000 (54 tonnes) and 140,000 lb GVM (63.5 tonnes) (i.e. B-Double capacity). Compared to the base case of 80,000 lb GVM (36 tonnes), the decreases in fuel consumption and emissions per ton-mile ranged from:

- 4 to 19% at 100,000 pounds GVW;
- 15 to 22% at 120,000 pounds GVW;
- 27% at 140,000 pounds GVW

At 140,000 lb the study found a 27% improvement for fuel consumption and emissions. This would indicate that the Australian B-Double fleet is providing a 27% improvement in fuel consumption and emissions compared to an 80,000 lb GVM (36 tonnes) single trailer combination.

[42] Ibid p.107.
[43] Updating Heavy Vehicle Charges, Regulatory Impact Statement NRTC, 1999, p. 34
[44] This compares a six axle semi-trailer with a maximum mass limit of 45.5 tonnes with a fuel efficiency of 0.45 litres per km and a nine axle B-double with a maximum mass limit of 68 tonnes with a fuel efficiency of 0.625 litres per kilometre travelled.
[45] http://www.atri-online.org/research/results/HPV.pdf

What is important is that charges encourage the simple, cost-effective and unimpeded utilisation of large combination heavy vehicles by the 'mainstream[46]' of the industry[47].

Governments must therefore be careful that pricing reform does not create cost and profit distortions within the heavy vehicle classes that discourage the application of higher productivity vehicles. For example, it is not insignificant that the proposed 30% (plus) increases in B-Double and Road Train registration charges under the NTC's 3rd Charges determination pricing model - whilst consistent with an established pricing model - would have prompted some operators to revert to single trailer combinations as profits per tonne kilometre travelled would have been lower if the charges had proceeded. This would have resulted in more heavy vehicles than are necessary on the roads – thereby exacerbating safety and environmental externalities.

8. CONCLUSION

Some degree of government intervention in road and rail is inevitable. At present there are two main areas of influence:

(i) Given the desire of Australian governments to adopt a user pays system for infrastructure expenditures, governments impose charges to recover certain costs;
(ii) To address the externalities associated with the consumption of road and rail freight, government intervenes in a number of ways.

There is an argument that in recovering infrastructure costs and imposing price controls, that government may inadvertently be promoting an anti-competitive environment within those freight markets where road and rail are possible substitutes. Hence, certain stakeholders believe that a third level of government intervention is warranted, being:

(iii) A further form of pricing intervention that ensures that no cross-subsidisation between and across modes occurs and that full user cost recovery occurs against a pre-determined cost model.

An additional layer of government intervention contradicts the important economic theorem that the free and unhindered operation of markets can lead to the most efficient outcomes. Hence, there is a strong argument that government intervention should be as minimal as possible, and where believed necessary, should be applied using best practice regulatory principles.

Intervention promoting competitive neutrality was a significant component of Australia's successful microeconomic reform agenda and has had a number of successes. However, the context when competitive neutrality worked successfully is an important focus. For example, intervention to promote competitive neutrality worked well in instances where public utilities compete with the private sector when both provide a relatively homogenous and highly substitutable product or service in a large market that is responsive to price fluctuations. Large markets that contain a high number of customers all wishing to maximise their utility for a product or service that is highly substitutable fosters competition and the benefits that commonly accrue from that, including the potential reduction of consumer costs.

The issue is that competitive neutrality in the context of road/rail is very much different and may not deliver the same advantages. This is because road and rail:

[46] ACIL Tasman, August 2004, Trucking – Driving Australia's Growth and Prosperity estimate that 92% of operators have 1,2,3 or 4 heavy vehicles in their fleet.

- Are freight substitutes in a relatively small market (i.e. only about 10% of land freight is considered 'contestable' between road and rail)
- Are increasingly not providing a highly substitutable and homogenous product or service (for example, simply getting product from x to y is no longer sufficient – value adding is now important);
- Price is not the main reason why a freight customer may substitute to an alternative mode.

Competitive neutrality pricing intervention in road/rail may therefore be an ineffective instrument because its potential application will be extremely limited and may increase, rather than reduce freight costs to the net disadvantage of the Australian economy.

It would appear that a more viable solution is to:

- Exhaust efforts to optimise the functioning of each mode before introducing a further and potentially distortionary further pricing adjustment;
- Limit areas of government intervention (where intervention is believed necessary it should be best practice and first and foremost achieve an 'optimal' system as defined on page one);
- Allow competing modes to compete on their individual merits to drive efficiencies;
- Maintain the effort, through the National Transport Commission and the COAG process to advance road and rail regulatory harmonization; and
- Increase investment in land transport infrastructure, including links with ports and airports

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