Submission to the Department of Infrastructure and Regional Development
Independent price regulation of heavy vehicle charges

Dr Philip Laird, University of Wollongong July 2017

The submission is based on research conducted at the University of Wollongong for over three decades into the topic of road pricing for heavy trucks and related topics but does not necessarily reflect the views of the University. This research includes a 1990 Transport Reviews paper *Road cost recovery in Australia and New Zealand*. The summary of this paper follows in Appendix A, as does the summary of a 1988 paper by Professor K Ogden *Road cost recovery in Australia*

More recent papers of this writer include three Australasian Transport Research Forum (ATRF) ones: 1993 *Rational road user charges for heavy trucks*, 1997 (with F Lander) *Land freight subsidies in Australia*, and 2006, *Freight transport cost recovery in Australia*.

1. Introduction

The National Transport Commission (NTC) approach, and that of the former National Land Transport Commission (NRTC) approach to road pricing for heavy trucks, coupled with Ministers voting on determinations, had issues from the first determination in the early 1990s. This approach is now well past its use by date. The ability of the NTC coupled with the present arrangements to instigate the necessary reform is clearly inadequate to the task. Accordingly, the present review by the Department of Infrastructure and Regional Development, with the Department of the Treasury, is timely.

The challenge is to ensure that the present review is not just another study, but actually leads to appreciable reform by 2018.

Although it was intended in 1990 at a Special Premiers Conference (now CoAG) to put truck road user charges on a 'user pays' basis with the option of some mass-distance pricing, the first determination of the NRTC in 1992 resulted in low annual registration charges with no mass distance pricing. The opportunity to have two levels of pricing, one for the populous zone, and the other for more remote areas, was never taken up.

The views of the Industry Commission (now Productivity Commission), in commenting in its 1992 Annual Report on the NRTC charges, are of note "...*Annual*

fixed charges are not efficient because costs vary with the distance travelled and the mass of the vehicle. The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs... Differences between the recommended charges and road related costs are greatest for vehicles competing with rail. The charges, as recommended, will therefore potentially distort the long-haul freight market as rail reforms take effect...."

The NTC charges have clearly distorted not only the long – haul land freight market, but also contestability with coastal shipping.

Despite some minor changes from the first NRTC charges, with recommendations for modest increases successfully opposed by the road freight industry (including in 2006 to a benign third determination of the NTC), this situation of under-recovery or road system costs fairly attributable to heavy trucks persists to this day.

The 2004 AusLink White Paper noted mass distance charges as an option along with congestion pricing in major cities.

It is now 11 years (yes, eleven years) since 2006 when the Productivity Commission issued a report on road and rail access pricing that found the NTC charges to be "conservative" and made recommendations that CoAG take up road pricing.

By 2009, delays were being encountered by the CoAG process and in 2010, the Henry Tax Review made several pertinent recommendations for road pricing reform. These included one that CoAG "should accelerate the development of mass-distance-location pricing for heavy vehicles…"

Since then, Infrastructure Australia has called for a user-pays approach to provide greater fairness in the way Australia pays for its roads to include the introduction of direct heavy vehicle charging.

The issue was again addressed in 2015 in the Competition Policy (Harper) Review, who gave a further call to government to accelerate heavy vehicle road pricing reform.

However, since the Productivity Commission inquiry into road and rail access pricing, there has been ongoing relaxation of mass and dimension limits for certain heavy trucks, with no improvement in pricing from the somewhat crude measures of an annual registration fee and a road user charge on fuel use. Surely by now there

could have been some application of mass-distance-location charges for new categories of higher productivity trucks ?

It is not as though there is no information on mass-distance-location charges in Europe or New Zealand. By way of example, a 2013 report "*Road Pricing and Transport Infrastructure Funding: Reform Pathways for Australia*" for Infrastructure Partnerships Australia on page 67 noted, in inter alia (Encouraging technology innovation in road pricing reforms – the New Zealand experience)

New Zealand has had variable mass-distance based charging regime in place since 1978. The Road User Charges (RUC) scheme applies to all vehicles over 3.5 tonnes GVM and all light vehicles powered by diesel or other fuels which are not taxed when sold. Under the system, road users purchase a licence to use the network in 1000 km increments.

All vehicles under the scheme must be fitted with distance recorders to provide reliable records of distance travelled. …

> Switzerland is also mentioned in this report: in part on page 45 "A selected vehicle class, whole-of-network approach is used for the Switzerland performance-related Heavy Vehicle Fee (HVF) system and forms the basis of the approach for the COAG HVCI process which would see alternative models of heavy vehicle road pricing and funding either on a whole-of-network or partial network basis.
>
> The Swiss HVF scheme applies to vehicles over 3.5 tonnes and uses a tonne per kilometre fee based on Euro Emission classes with usage data collected via an on-board unit or periodic declarations.

Further information is given in a paper *Charging for use of infrastructure by road freight: European experience* by Chris Nash (Institute for Transport Studies, University of Leeds) which is on the ACCC website at accc.gov.au. The paper notes, in part Section 4.2 that "A large majority of people in Switzerland agreed that up to 2/3 of the revenue from the HVF (Swiss Heavy Vehicle Fee) should be used for improvements in rail infrastructure in the form of the new base tunnels under the Alps, as part of a strategy of shifting goods from road to rail. The remaining 1/3 goes to the cantons where it is used mainly for roads."

In the late 1990s, Australia was noted as having the highest road freight per capita in the world (net tonne km per person). It would be interesting to find out if this

is still the case.

In any event, one has to ask if there has been too much emphasis being placed in Australia on truck productivity as opposed to full user pays pricing for heavy trucks, or improving overall land transport productivity in a balanced manner ?

2. More on New Zealand

Mass distance charges have been in use in New Zealand since 1978, and for a heavily laden semitrailer now amount to 56 cents per kilometre (or at $A1 = $NZ1.05, about 53 cents Australian per kilometre). In Australia, the same truck hauling 100,000 kilometres a year or more, pays registration and fuel road user charges of less than 17 cents per kilometre.

The difference is about 36 cents per km. So, for a Melbourne –Sydney haul of some 860 kilometres, the difference in road user charges for the same truck would be over $300.

Data from New Zealand shows that their road user charges, which are mostly made up of mass distance charges levied on heavy truck operations, account for some 37 per cent of all revenue to their land transport fund.

In Australia, NTC data shows that in 2014-15, heavy vehicle operators paid combined road user charges and registration fees revenues of about $3 billion. This was about 12.5 per cent of all government outlays on roads of some $24 billion. This 12.5 per cent is too low, particularly when it is considered that the construction of new major highways is now undertaken with concrete pavements and climbing lanes for the benefit of heavy truck operations.

It is hard to see why Australian charges for heavy vehicles in aggregate, and charges for many heavy semitrailers, should continue to be set at about one third of the respective New Zealand charges.

3. Road - cost recovery

The Productivity Commission in its 2006 inquiry into Road and Rail Access Pricing found that as a class of heavy trucks, B-Doubles and certain other articulated trucks ***"do not cover the network-wide costs attributable to their road use."***

Anomalies in heavy vehicle pricing to the 2006 inquiry are still to be addressed. One such was raised in a 2006 submission from the Coles Myer Ltd (CML) Group to the Productivity Commission, as follows:

> Neither the current system nor that proposed by the NTC acknowledge the inherent difference between road freight for retail and other purposes. As indicated earlier, CML transports are loaded by volume rather than weight. This makes them consistently lighter than similar vehicles hauling for other industries. While a 14-metre trailer would normally carry 18 tonnes, carrying general retail merchandise it averages 10 to 12 tonnes. Consequently axle weight and impact of the road surface is considerably less than what would normally be expected, yet these vehicles pay the same registration fee and receive the same fuel rebate as their heavier counterparts. CML believes pricing structures should recognise or offer incentives for reducing axle-weight.

As above, in 2006 the Productivity Commission found the NTC charges to be "conservative". Two other approaches to road pricing include:

Intermediate - including the former Inter-State Commission findings during the 1980s, the Over-Arching Group recommendations to the 1991 Special Premiers Conference and NSW permit fees for heavier semitrailers and all B Doubles then in use.

High, or "user pays" - including a Bureau of Transport and Communications Economics 1988 report *Review of road cost recovery* (noted in the 1996 report of the Productivity Commission), an earlier NSW Commission of Inquiry (McDonell) methodology, and, ongoing New Zealand Road User Charges.

Each of the above cited methodologies uses Equivalent Standard Axle (ESA) kilometres for separable pavement cost allocation which depends on the fourth power of the axle loads. In addition to the use of ESA kms (eg about 20,000 for a heavily laden B-Double), each methodology uses average gross mass kms, passenger car equivalent kilometers (eg 3 for a semitrailer), and plain vehicle kilometers as parameters for road cost allocation.

Use of the McDonell methodology to calculate road system costs attributable articulated trucks gave (c2005) an estimate of about $1500 million per year higher than the NTC approach (which is light on ESA kms and makes more use of the other

parameters). The 2006 ATRF paper *Freight transport cost recovery in Australia*, has further details.

The main beneficiaries of the hidden subsidies to the heavier trucks driving large annual distances are not the truck drivers who work hard in a dangerous occupation but the companies that choose to consign freight by road using such trucks.

4. Modal shifts

The resulting hidden subsidies for heavy long-distance trucks are one reason why there has been a steady drift from rail to road for interstate freight, to the point that there are now over 15 million tonnes per annum (mtpa) of freight moved between Sydney and Melbourne, by over 3000 B-Doubles and semi-trailers each day. On this corridor, rail now moves about 2% of intercapital city freight in containers (2015 ARTC Business case for the Inland Railway) along with some steel and other bulk freight. In the early 1990s, rail moved over 20 % of intercapital city freight on this corridor.

The hidden subsidies not only affect rail freight, but also sea freight. By way of example, for over 40 years, Hansons had moved aggregate from their Bass Point Quarry in Shellharbour to inner Sydney by ship. However, in 2013, they sought and obtained permission from the New South Wales Government to discontinue the use of shipping and put quarry trucks on congested Wollongong and Sydney roads.

The 2009 decision of Shell Oil to cease using rail for long-haul movement of petroleum products in New South Wales and to use B-Doubles, is yet another modal shift. Although this was done for several reasons, it was in part due to the hidden subsidies for B-double operations. Shipping was once used extensively to move oil to regional ports.

Yet, today, Australia over-relies on road freight of petrol and diesel, often with tragic consequences. One such was the 2013 fatal crash involving an oil tanker at Mona Vale, where later the company owning the truck was found in 2014 pleaded guilty to 67 counts of operating unsafe vehicles, related to its Victorian fleet.The key safety breaches included problems with trucks' brakes and shock absorbers, oil leaks and worn tyres.

A speech given by the then NTC Acting Chairman on 14 February 2006 notes that "only 10-20 per cent of the road freight task is contestable." Accepting that only 10 per cent of the 2003-04 articulated truck task of 121 billion tonne km is transferred to rail, the reduction in diesel use at 2004 estimates of 36.7 tonne km per litre (ABS, SMVU) would be about 330m litres (per year). The diesel needed by rail would be about 110m litres and allowing for some road pickup and delivery, a net saving of over 200m litres per year would result. There would also be an appreciable reduction in both carbon dioxide emissions and external costs plus improved road safety.

However, since 2003-04, the articulated truck task of 121 billion tonne km has shown strong growth to 157 billion tonne km in 2015-16 (ABC SMVU), whilst non-bulk rail showed little or no growth.

5. External costs

External costs of articulated truck operations (excluding the under-recovery of road system costs of $1.5 billion per annum) were estimated by this writer in 2006 (*Freight transport cost recovery in Australia*, Australasian Transport Research Forum, Gold Coast) as a further $1.5 billion per year.

External costs include amenity, noise and air quality as well as emissions. These costs were canvassed in the 2012 report by the NSW Independent Pricing and Regulatory Tribunal of New South Wales in its 2012 Review of Access Pricing for the NSW Grain Line Network.

Although emissions and external costs do not appear to be mentioned in the current discussion paper, it is submitted that they are significant, and are factors supporting reform of road pricing of heavy trucks. So also is road safety.

6. Questions for discussion

- Q.1 Do you have any comments, concerns or observations in relation to the transition from the current process to independent price regulation?

Reform to date has taken too long, it is better that it be accelerated, and moved away from the National Transport Commission.

Q.2 What do you understand independent to mean? Do the options presented in the paper accord with that understanding? –

Independent means not subject to undue persuasion by a particular lobby group or political intervention .

Q.3 In the short term, while the price regulator would only be regulating prices for heavy vehicle charges, could user concerns be adequately addressed through regulatory rules or is an appeal process needed? –

An appeal process could be a recipe for further delays. .

Q.4 How important is a nationally consistent approach to the regulation of heavy vehicle charges? –

A national approach is to be preferred, however, charges that may be appropriate in populated areas (including South East Australia) may be too high for remote areas.

Q.5 What do you consider more important for establishing an independent price regulator for heavy vehicle charges, organisational capacity in economic regulation or industry specific expertise? –

Organisational capacity in economic regulation is preferred, however, transport specific expertise, including engineering expertise is needed. This should extend to a thorough understanding of each of the parameters used in road cost allocation, being:

Equivalent Standard Axle (ESA) kilometres for separable pavement cost allocation which depend on the fourth power of the axle loads

average gross mass kms,

passenger car equivalent kilometers; and,

vehicle kilometers.

Here, the comment of the Victorian Government in their July 2016 submission to the NTC is relevant where it notes that some of the road cost allocators have not been revised for more than 20 years and that " a review of the cost base allocators should be the highest priority" also, a "review is a necessary pre-cursor to the development of more accurate mass-distance-location based charges in the future."

Q.6 What would be your preferred option for establishing an independent price regulator for heavy vehicle charges? –

This writer suggests that the difficulties with the present arrangements and the ongoing high hidden subsidies, the only viable option is Option 1: The Australian Competition and Consumer Commission (ACCC) would undertake independent price regulation of heavy vehicle charges

It is noted that under this option, the ACCC would undertake independent price regulation of heavy vehicle charges, with responsibility for developing binding heavy vehicle charges determinations.

The many advantages listed (and the appreciable cost of road system cost underrecovery from the heavier trucks) clearly outweigh the two disadvantages cited

- Implementation may be resource intensive, particularly if new legislation is required;
- Expertise in the heavy vehicle and roads sectors would need to be acquired.

As above, the independent regulator should be supported by appropriate engineering and other expertise.

6. Conclusion

The National Transport Commission (NTC) approach, and that of the former National Land Transport Commission (NRTC) approach to road pricing for heavy trucks, coupled with Ministers voting on determinations, has had issues from the first determination in the early 1990s. This approach is now well past its use by date. The ability of the NTC coupled with the present arrangements, to instigate the necessary reform is clearly inadequate to the task. Accordingly, the present review by the Department of Infrastructure and Regional Development, with the Department of the Treasury, is timely.

The challenge is to ensure that the present review is not just another study, but actually leads to appreciable reform by 2018.

With Australia's population having grown to over 24 million, road outlays costing over $24 billion per year, and road congestion due to cost $20 billion a year by 2020, road pricing reform for heavy trucks is overdue.

Associate Professor Philip Laird, Ph D, FCILT, Comp IE Aust
Faculty of Engineering and Information Sciences
University of Wollongong NSW 2522

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APPENDIX A Summaries of two Transport Reviews papers

The summary of a Transport Reviews paper by P G Laird *Road cost recovery in Australia and New Zealand* follows:

Road cost recovery from heavy vehicle operations in Australia has been the subject of further studies in addition to the eleven studies summarized by Ogden (*Transport Reviews,* 1988, 8, 101–123). The recent adoption of increased mass and dimension limits for heavy vehicles has also resulted in some changes to road cost recovery.

As of January 1987 a new Federal Interstate Registration scheme became effective. The level of charges have been reviewed in 1987 and 1989 by an Inter-State Commission, and have resulted in further changes in road cost recovery.

The paper reviews these changes and recent studies. The results of these studies range from the Federal Bureau of Transport and Communications Economics finding significant under-recovery of road system costs from heavy vehicle operators to a Royal Commission into Grain Storage, Handling and Transport finding that sufficient revenues are generated by the various taxes and charges on road transport to cover the costs of any marginal increase in road freight. These variations in estimates of levels of road cost recovery are similar to the variations in annual registration fees, permit fees and fuel taxes levied by the various State and Territory Governments. These road user charges are in addition to Federal fuel excises and other general taxes.

A brief account is given of the weight distance taxes that have been used successfully in New Zealand since 1978. The paper also considers other external costs of the road freight industry such as road damage due to overloading, and road accidents. It is suggested that a growing land freight transport task and declining self sufficiency in proven reserves of liquid fuel in Australia will encourage moves to full cost recovery from heavy vehicle operations.

Summary of the 1988 Transport Reviews paper *Road cost recovery in Australia* by K W Ogden

This paper addresses the question of road cost recovery in the Australian context. It reviews some of the major issues and emphasizes the inherent problems (both theoretical and practical) in resolving these issues. The result of these complexities is that the answers to many of the key questions are ‘assumption-sensitive’. Some of the more significant studies which have been conducted in Australia in recent years are briefly reviewed, and the numerical results of one recent study—the National Road Freight Industry Inquiry (1984) are presented.