

A Review of Incremental Pricing Trials in Australia

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Abstract

This paper reviews incremental pricing trials for heavy vehicles undertaken in four jurisdictions in Australia from 2009 to 2011. The trials formed part of the first phase of the COAG Road Reform Plan (CRRP) project and the second stage sought a review of those trials.

The research method involved interviewing key trial and scheme stakeholders to gain a broad understanding of the foundations, the hurdles and setbacks and the lessons learnt from the various trials.

The trials did not proceed as originally envisaged. Of the four jurisdictions that volunteered to develop incremental pricing trials only two, Victoria and New South Wales, have successfully implemented trials.

The trials highlighted some of the practical difficulties which will be encountered in progressing to possible, future pricing reforms in Australia.

Keywords: Pricing, Heavy Vehicles, Roads

A REVIEW OF INCREMENTAL PRICING TRIALS IN AUSTRALIA

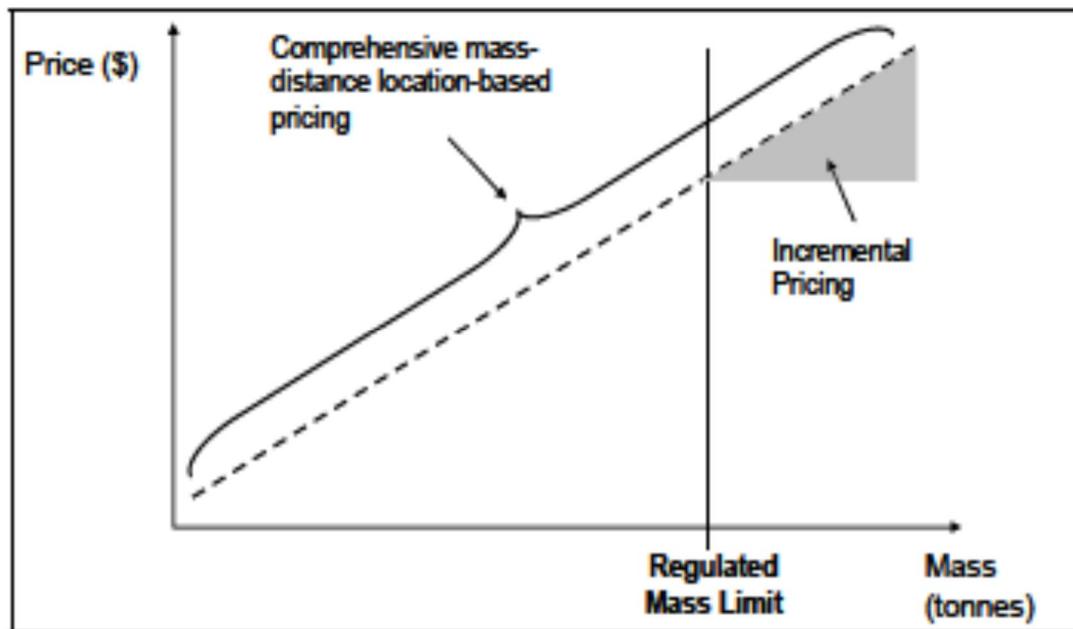
1 INTRODUCTION

In 2009, the National Transport Commission (NTC), Victoria, New South Wales, South Australia and Queensland embarked on a set of trials of incremental pricing whereby heavy vehicles could pay a charge to operate at a mass higher than the regulatory limits. The trials formed part of the first phase of the COAG Road Reform Plan (CRRP) project and the current second stage sought a review of those trials.

An incremental pricing scheme charges only for access to mass above a base mass limit. In contrast, under a comprehensive mass-distance location-based (MDL) charging scheme (which is planned for phase three of the COAG Road Reform plan), the charge for road use would apply for all levels of road use in terms of mass.

The relationship between a comprehensive mass distance location-based charging scheme and an incremental pricing scheme for the mass component of road use is illustrated in **Figure 1**. This outlines a hypothetical linear relationship between mass increments and the price that is charged for additional mass. The graph illustrates that an incremental pricing scheme is a partial form of a comprehensive mass distance location-based charging scheme, in that it only applies to mass increments above a base mass limit (referred to as regulated maximum mass limits in Figure 1).¹

Figure 1 Direct and Incremental pricing of mass

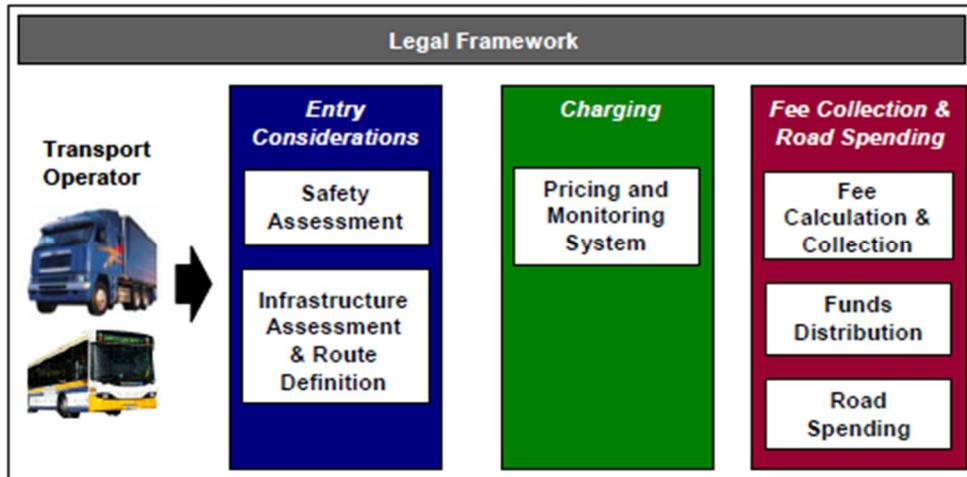


Source: NTC, January 2009

¹ NTC, 2009

There are a number of components of an incremental pricing scheme **Figure 2**. These components relate to: entry considerations; charging; and fee collection and road spending, which would each be established under a legal framework.

Figure 2 Components of an incremental pricing scheme



Source: NTC, 2009

Other schemes, with similar features to the incremental pricing trials, have been operational in Queensland, Western Australia, the Northern Territory, New South Wales and overseas. The characteristics of these schemes differ dramatically. For example, the New South Wales incremental pricing trial is concerned with one freight owner on one short route to rail head, while the Western Australia (WA) scheme is open to any proponents and is at the discretion of Main Roads WA to determine whether the two part charge will be recovered from the freight owner.

COAG Road Reform Plan (CRRP) commissioned GHD to investigate and report on the foundations of both the schemes that have been in operation as well as those envisaged for the trials. The foundations included:

- the objectives of the trial or scheme;
- the legal framework;
- the process of safety and infrastructure assessments;
- route definition requirements;
- the pricing mechanism; and
- the method for collection and redistribution of any funds from the schemes or trials.

Understanding the foundations of these pricing attempts, as well as the key factors in their success or failure, will assist CRRP in their more fundamental work on pricing reform and progression to possible future Mass, Distance, Location (MDL) pricing approaches.

2 RESEARCH METHOD

The research method involved interviewing key trial and scheme stakeholders to gain a broad understanding of the foundations, the hurdles and setbacks and the lessons learnt from the various trials. Over 30 people from governments, industry associations and operators were interviewed to gain insight into the outcomes of the trials.

The results of the trials in each of the four jurisdictions that volunteered to develop incremental pricing were qualitatively matched against each of the key foundation principles, namely:

- Objectives of Trial
- Industry Engagement Process
- Legal Framework
- Safety Assessment
- Infrastructure Assessment and Route Definition
- Pricing
- Monitoring System
- Fee Calculation and Collection
- Fee Distribution and Road Spending

The objectives of the trials slightly varied across the four jurisdictions and were essentially to test the feasibility of implementing a direct road user charge to recover the cost of additional road wear associated with heavy vehicles operating at axle weights that exceed current statutory limits.

3 PRELIMINARY RESULTS

Of the four jurisdictions that volunteered to develop incremental pricing trials only two, Victoria and New South Wales, have successfully implemented trials. In Victoria, in September 2009, a transport operator was approved to run one route as an Incremental Pricing trial. Its operations under the trial consisted of running containerised grain on three B-doubles from regional Victoria to the Port of Melbourne, a distance of just under 80 kilometres. Under the trial, each B-double has permission for a mass of 70.5 tonnes. While there is no set limit per se and each application is assessed upon merit, VicRoads informed the study team that the general intention was the maximum mass would be within approximately 3 tonnes of the standard 68 tonne HML limit. Weight distribution again is assessed on a case by case basis. The transport operator's vehicle weight distribution for the trial is as follows:

- Steering axle – 6.50 tonnes gross (HML limit 6 tonnes)
- Tandem axle groups (each axle 4 tyres) – 17.50 tonnes gross (HML limit 17 tonnes)
- Tri-Axle groups (each axle 4 tyres) – 23.25 tonnes gross (HML limit 22.5 tonnes)

All trial vehicles must be accredited under the National Heavy Vehicle Accreditation Scheme (NHVAS) for mass management. Road Friendly Suspension (RFS) is a requirement under this scheme.

In New South Wales, the current trial, which began in April 2010, is being conducted in conjunction with a Local Government Council and involves 750 metres of local road from the business to a private rail head. The Roads and Maritime Services collects the payment transparently from the operator, and is contractually bound with the Council as the asset manager to remit the money for the ongoing maintenance of the road. At this stage, the administrative details are yet to be finalised but it is intended that the Roads and Maritime Services will invoice the operator periodically and remit to the Council annually.

The trial allows the operator a 5 tonne increase on a quad semi-trailer using a one 40 foot container loaded with a side lifter. In total, the allowance is 55 tonnes, and represents a productivity gain of 16-18 per cent. The use of full 40 foot containers minimises handling costs at the rail head and permits the most efficient shipping of container to worldwide locations. The operator is already National Heavy Vehicle Accreditation Scheme (NHVAS) and Intelligent Access Project (IAP) compliant. The charge itself is calculated on a per tonne basis from reports provided to the Roads and Maritime Services which identify the number of trips and the weight per trip.

In South Australia, the legal hurdles in terms of fee collection were determined to be insurmountable. Queensland’s potential trials did not proceed primarily as a result of technical issues involved in the route assessments.

Table 1 compares the key features of the two operational incremental pricing schemes.

Table 1 Characteristics of Implemented Incremental Pricing Trials in Victoria and New South Wales

Characteristics	Implemented Victorian Trial	Implemented NSW Trial
Number of Trials	One in operation another two in planning	One in operation
Length of Route	80km	750m
Commodity	Containerised Grain for export	Containerised frozen meat for export
Road Owner(s)	VicRoads	Local Government Council
Trial Administrators	VicRoads	Roads and Maritime Services
Price per Trip	\$20	<\$1
Price per Kilometre	25c	<\$1
Number of Trips per	Approximately 1,000	Approximately 1,000

Characteristics	Implemented Victorian Trial	Implemented NSW Trial
Annum		
Vehicle Type	B-Doubles	Quad axle semi-trailer
Incremental Weight per Vehicle	2 tonnes	5 tonnes
Benefits	AUD\$430/trip net savings	Estimated 16 – 18% productivity gain
Objectives of Trial	The objective of the Victorian trial is to determine the feasibility and effectiveness of direct user charging for mass above the general mass or higher mass limits and test the administrative systems that are involved in implementing incremental pricing. In addition, the trial is also aimed at evaluating the commercial viability of the scheme from an industry perspective, taking into account the willingness of the road transport industry to pay for additional mass.	The objective of the trials is to test the feasibility of implementing a direct road user charge to recover the cost of additional road wear associated with heavy vehicles operating at axle weights that exceed current statutory load limits.
Industry Engagement Process	VicRoads approach industry via the Victorian Transport Association	The operator approached the Roads and Maritime Services through the Council.
Legal Framework	As envisaged in feasibility study, trial vehicles operate under permit conditions and are charged a “Maintenance Security Fee”. Given the relative newness of the trial it is unknown whether the funds collected will be used to fund actual damage of road wear caused by vehicles participating in the trial.	The current trial relies on permit scheme provisions.
Safety Assessment	The safety assessment conditions in the implemented trial do not fully extend to those outlined in the feasibility report Current conditions for signoff require that vehicles must have	The operator involved in the trial is NHVAS and IAP compliant. No further safety requirements are in place.

Characteristics	Implemented Victorian Trial	Implemented NSW Trial
	<p>an Electronic Stability Control (ESC) and GPS installed. IAP is not currently required but is considered to be a likely and advantageous future direction. Additionally, the operator must be part of a certified vehicle maintenance program such as NHVAS.</p>	
Infrastructure Assessment and Route Definition	<p>The route defined for the implemented trial did not require infrastructure improvement and is wholly owned by VicRoads.</p> <p>It is understood that the two impending trial routes involve either bridge works prior to approval and / or involve multiple asset owners.</p>	<p>A route and infrastructure assessment was completed prior to the implementation of the trial. The assessment was at the cost of the operator</p>
Pricing	<p>It is understood that the trial pricing was based on the PAYGO approach and included a 'gate keeping fee' to the operator to cover infrastructure assessment costs.</p> <p>If other operators chose to utilise the same vehicle configuration on the same route they would not have to pay the gate keeping charge.</p>	<p>Pricing is based on previous assessment based on the PAYGO approach.</p>
Monitoring System	<p>The onus is on the operator to keep records of movements which can be audited by the road agency. The operator is required to have a GPS system on the vehicles and an Electronic Stability Control device.</p>	<p>The monitoring system is based on self declaration by the operator.</p>
Fee Calculation and Collection	<p>The operator estimates trips in advance and the agency calculates the charge based on actual travel.</p>	<p>The operator pays in advance on estimated travel per annum and the agency adjusts based on actual travel.</p>
Fee Distribution	<p>Fees are to be contained in a maintenance security fund.</p>	<p>The agency collects the payment from the operator, and is</p>

Characteristics	Implemented Victorian Trial	Implemented NSW Trial
and Road Spending	Given the recent implementation of the trial no road spending has occurred.	contractually bound with Council as the asset manager to remit the money for the ongoing maintenance of the road. At this stage, the administrative details are yet to be finalised but it is intended that the agency will invoice the operator periodically and remit to the Council annually.

The key differences between the trials can be summarised as:

Champions of Trials

In Victoria, the State Road Agency championed the trial and engaged industry and worked with an operator to implement a trial. In New South Wales, the trial was first championed by the operator who worked with the relevant road owner and the Roads and Traffic Authority to develop the trial

Legislative Approach

Both jurisdictions faced legal issues in implementing the scheme, Victoria utilised a previously existing permit scheme approach and it appears that NSW also utilised a permit scheme and set up a contract letter of agreement with the Council.

Role of the State Road Authority

In Victoria, Vic Roads is both the owner of the road asset and the administrator of the scheme. In New South Wales, the Roads and Maritime Services operates as administrator on behalf of the Council and was also involved in establishing the trip price.

Gate Keeping Fee

Victoria required the operator to pay for the cost of the infrastructure assessment and administrative costs involved through a gate-keeping fee. In NSW the operator paid the costs of the network assessment outside of the formal trial parameters.

4 OBSERVATIONS FROM TRIALS

4.1 Observations and Considerations

The experiences in the formal incremental pricing trials indicate that:

1. Schemes have often arisen as ad hoc responses to stated needs by operators;
2. Where trials have been implemented it is where infrastructure ownership was in the hands of one owner and usually the state road agency;
3. Where trials were implemented, the routes have been assessed as meeting standards required for overmass vehicles. Where there has been an issue in terms of road or bridge standards the trial has usually not progressed unless there has been a commitment by the operator to be involved in investment;

4. Charges agreed to for incremental damage appear to be a small fraction of the potential productivity benefit to the operator;
5. Pricing methods, although not entirely consistent, have all made some attempt to cover the marginal cost of additional road wear;
6. Any funds collected in these schemes appear to not be incorporated into the state accounts for determining the cost base for heavy vehicles;
7. Administration has been generally paper based and considered too onerous for broader application;
8. Self declaration by operators is appropriate given the size of the trials that were implemented however this may not be an appropriate enforcement method for broader MDL consideration; and
9. An increased recognition by asset managers that permitting increased mass on roads can be an opportunity to share risk.

5 LESSONS FOR PRICING REFORM

5.1 Administration and industry engagement

When progressing MDL reform the appropriate administration will be paramount. Experience from the incremental pricing trials indicates that ad-hoc approaches that required significant paper based recording and auditing process as well as significant resources to determine the appropriate incremental pricing will not be appropriate or efficient for a broader scheme. As a result it is recommended that systems are aligned between jurisdictions and a centralised streamlined process is established to provide a one-stop shop for both the industry and road agencies.

As a result of the trials it has been recognised that industry is prepared to pay a reasonable price for incremental mass and were keen to progress this opportunity by working with road agencies. The industry's frustrations with the trials stem from the cost of establishing a trial and the perception that some suggested routes were too difficult to determine a price due to ownership complexity and infrastructure issues. A simple and effective pricing solution will reduce these concerns dramatically as will a one-stop shop approach to the determination of the charge.

5.2 Monitoring

The use of Intelligent Access Program (IAP) in the incremental pricing trials was not seen as necessary by jurisdictions in all trials and, instead, other methods of monitoring were utilised. The role of IAP will be a significant consideration going forward for MDL and it is recommended that the role of IAP and other monitoring methods such as GPS be clarified as expediently as possible.

5.3 Legislative

Legislative advice for a number of jurisdictions indicated that state road authorities could not collect funds from incremental pricing trials as they could be conceived as a tax. This was overcome in the incremental pricing trials by reliance on existing permit schemes and contractual arrangements that were already in place in jurisdictions. This is a significant consideration going forward for MDL pricing and would require institutional change.

5.4 Pricing

If MDL is to incorporate a form of incremental pricing, a number of issues regarding the calculation of the charge and the redistribution of the funds will need to be overcome. As a first step it is recommended that a national model is developed which provides a simple and transparent method of calculating price (which would incorporate administration costs) as well as relative revenue redistribution to varying road owners.

5.5 Road spending

Under the current status of the incremental pricing trials it is unclear whether the revenue collected from the trials is being returned to fund work on the routes. For efficiency purposes, under a national system there will need to be an audit process to ensure that these funds are being redirected to maintain the routes being traversed. Further to this, funds collected and utilised in this manner will need to be appropriately incorporated into the road cost base accounts. This will be particularly an issue if there is broader use of incremental pricing under MDL.

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