User Charges on Road Use in Australia

Presentation to Road Safety Committee
Parliament of Victoria

Harry Clarke
La Trobe University
March 2010
Background

- Report (with David Prentice) to *Australia’s Future Tax System Review*. Online [here](#).

- Examined taxes/charges on road transport & how such revenues are spent.
Main issues

• Current excises on fuels, vehicles, drivers.

• User charges - congestion, road damages, insurance for traffic accidents etc.
Main policy contentions

• Possibility of swapping user charges for current taxes & charges.

• Supply issues – case for hypothecating user charges to road supply/maintenance.
Australia

• Large country, sparse average population density but highly urbanized.

• Issues of getting raw materials & people around nation.

• Congestion in eastern seaboard cities.
Road transport sector is a big....... 

• user of public resources ($12.2b in 05/06).

• generator of revenues ($10b in fuel excises in 2005).

• source of external costs ($9.4b on 05/06).
Status quo

• Now road costs *more than* met by current charges.

• Payments don’t reflect particular costs generated.
Registration charges – scaled to reflect road damages but not distances travelled or specific road durabilities.

Fuel excises don’t reflect congestion or road damage costs.
Reform possibility

• Should current *two-part tariff charges* (rego, fuel excises) be replaced by targeted user charges?
Motivation

• Get cost-economising behaviour not just cost-recovery – efficiency dividend.

• (further) Basing road supply decisions on user costs can lead to demand-responsive supply decisions.
1. Fuel excises

- Australian fuel use demands are very price unresponsive (elasticity ≈ -0.23).

- Productive use of fuels is (correctly) not taxed.

- Given low price responsiveness, fuels might be taxed irrespective of arguments for using them as ‘user charge’ proxies.
If we did want excises on fuel to yield revenue & as a proxy for environmental charges.

- Optimal tax $1.99 /litre, $1.51 reflecting tax-gathering & environmental proxy of 48c > current tax 38c.

- Case for excise irrespective of environment arguments.

- Also - low collection costs, low evasion possibilities
Thus....

• While we support user charging we don’t suggest this *necessarily* be ‘balanced’ by cuts in fuel excise –not appropriate if a strong revenue role for this excise.

• Might seek cut in *other* revenue-raising taxes.
2. Other car/fuel taxes

• **Concessionary taxes** on alternative fuels need to be justified – they would **never** be zero.

• **Luxury car tax** yields small DWLs but no sensible efficiency arguments for retaining it.

• Abolish 10% **tariff** on imported cars.
3. User charges - congestion

- Endorse arguments for congestion pricing.

- Increased focus by analysts on bottleneck congestion & role of heterogeneous travel.

- Key issue: Comprehensive or partial reforms?
Congestion pricing

• **Comprehensive** – electronic pricing based on GPS or gantries. Feasible now.

• **Partial** reforms – cordon pricing of CBDs plus pricing of major ring-roads & arterials.

• **Evaluation** – costs of providing technology, public acceptability & ‘second-best’ issues.
A case for waiting, doing something big?

• Not for doing nothing now - ‘pick low hanging fruit’ – use cheap partial reforms (limited pricing, parking policies) & then jump to comprehensive electronic pricing.

• Costs of partial reforms (e.g. London pricing scheme) high & higher in Australia. Second-best costs also.
Can learn....

• From London, Stockholm & Singapore schemes.

• From trials in Netherlands.

• Be hard-headed about technology choices.
Digression - Telematics

• Probably premature to endorse use of in-vehicle boxes with GPS capabilities.

• But useful - commercial & regulatory applications.
4. User charges - parking

- An underutilised **interim policy** with high acceptability.

- Get rid of subsidised on-street parking. Price parking spots so an average 15% vacancy rate.
5. User charges – GGEs

• Petrol excises accurately reflect GGEs.

• But no need for *particular* tax if have an ETS.

• $20/tonne CO_2 \approx 5$ cent charge/litre on unleaded petrol. Negligible.
6. User charges: Vibration/noise costs

- Location-specific.

- Best dealt with by regulation.
7. User charges – traffic accidents

- 70% of traffic accidents involve another vehicle.

- If average damage per vehicle is D social damage is 1.7*D – an unpaid external cost.
Internalising accident externalities

- Charge insurance using driver characteristics & distance travelled. Charge 2-6 cents/km.

- Becoming a commercial reality.
Accident externalities

• Hypothesis - collisions increase with traffic density.

• Little work done in Australia.
8. Road damages

• Currently damages recouped inefficiently.

• COAG proposal to change this so mass-distance-location pricing occurs.
User charges – road damages

• Technology of pricing *loaded weight* – resolved but expensive transaction costs?

• Interim policy of ‘incremental pricing’ – can use low durability roads if pay extra fees.
9. Matching up with supply reforms

- User charges can be linked to supply decisions.

- Current road plans divorced from economics – driven by engineering & safety.
...role for economists (& engineers)

• e.g. Small & Winston (1988) show switching to optimal road durability on US interstates cuts maintenance costs 40%.
What is sought?

• Road design optimising present value of roads as capital assets.

• Need to account for CSO’s & indivisibilities.
Commercialisation methodology

• Efficient charges forecast using projected demands by user type.

• These return costs with appropriate return on capital.
Critique

• Problems with cost-recovery if road use uneven (& indivisibilities, CSOs).

• Roads often local monopolies so difficult regulatory issues.
Conclusions

• A case for shifting to user charges on roads. Independent of case for excises on fuel.

• The big agenda is to link revenues from these charges with efficient road provision.
Conclusions – political economy

• Need courageous politicians of the type who implemented tariff reforms.

• Economists are now focusing on political economy issues – trials, alternatives, sweeteners, electoral cycles....this is useful.
Thank you.