

# Subsidising unsafe road use

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## Abstract

Motor accident regulation of compulsory third party (CTP) insurance in Australia and New Zealand has the effect of taxing safe-road use and subsidising unsafe road-use. This regulation has significant safety consequences as it inhibits insurers from encouraging road safety. In the UK, where the regulatory environment is different, there is a rapid growth in technology-enabled usage based insurance (UBI). UBI is being used to encourage safer driving, particularly among high risk groups. In the absence of reform to CTP regulation, there is a high possibility that in this decade Australia and New Zealand will fall significantly behind the UK in reducing the road toll.

## Keywords:

Insurance economics; usage-based insurance; innovation; road-safety incentives.

## Introduction

How much should we subsidise unsafe road use? This might appear a strange question. Readers might ask why we would even contemplate it. However, the question is very relevant because motor accident regulation in Australia and New Zealand has this very effect; subsidising the insurance premiums for unsafe road users and taxing the insurance premiums for safe road users.

This paper briefly examines the subsidies to unsafe road use and the potential benefits and issues in removing them.

## The subsidies for unsafe road use

In Australia and New Zealand vehicle owners take out two broad types of insurance: insurance to cover property damage (e.g. damage to vehicles) and insurance to cover the human costs of road crashes (e.g. medical costs, loss of earnings etc). The insurance cover for human costs is mandated and is commonly known as compulsory third party (CTP) insurance.<sup>1</sup>

In all jurisdictions except NSW,<sup>2</sup> the CTP premium for a vehicle type (e.g. passenger vehicles) is fixed regardless of driver behaviour and vehicle choice.<sup>3</sup> Thus, for example, in most jurisdictions the CTP insurance premium for a passenger vehicle is the same regardless of whether the insurance covers a heavy vehicle that is driven recklessly or a compact vehicle that is driven carefully.

Relative to a system in which premiums vary with the expected cost<sup>4</sup> of claims, the regulation has the effect of increasing premiums for the low-risk drivers (i.e. those with a low expected claims cost) and reducing premiums for high risk drivers. As the schemes are designed to recover costs, the effect is to tax safe road-uses to subsidise unsafe road-uses.

This effect is illustrated in Figure 1 below. The curved line depicts the expected CTP claims cost of insured drivers, ordered in terms of their risk (which determines expected claims cost). Those at the left hand side of the figure are high risk drivers; those at the right, low risk.

As reflected in the figure, while all drivers pose some safety risk, there can be substantial variation between the highest and the lowest expected claims cost. For example, as commonly recognised, young inexperienced drivers are much more likely to have a road-crash than a middle aged person with a good driving record.

With some minor exceptions, the regulated CTP insurance premium (depicted by the dashed line in the figure) is constant regardless of risk. In the absence of price regulation, a competitive insurance market would set premiums that mirror the expected claims costs. Thus, relative to prices in a non-price regulated system, the unsafe road users pay less and the safe road users pay more.

<sup>1</sup> CTP insurance schemes vary by jurisdiction. In some states (NSW and Queensland) there are competing CTP providers. In other jurisdictions there is a single provider (ACT) or a government CTP scheme (Victoria, Tasmania, Northern Territory, Western Australia, South Australia). In South Australia claim management is outsourced to Allianz. Although not described as CTP, in New Zealand, the Accident Compensation Corporation manages a social insurance scheme funded through compulsory motor vehicle license fees (analogous to an insurance premium) and levies included in the price of petrol.

<sup>2</sup> In NSW some limited risk based pricing is possible.

<sup>3</sup> There are other small variations e.g. in Victoria, the scheme premiums can vary by postcode; in Tasmania there is a discount for pensioners; in New Zealand part-funding of the scheme is through petrol levies.

<sup>4</sup> The 'expected cost' simply refers to the average forecast cost.



**Figure 1: Effect of CTP price regulation in Australia and New Zealand on insurance premiums**

## The significance of the subsidy

The subsidy, and the underlying regulation, is primarily of concern to the extent that it discourages safe road-use.<sup>5</sup> The regulation may do so directly by restricting the use of CTP insurance premiums to encourage safe driving and safe vehicle choices. The regulation also prevents insurers from bundling CTP insurance with property damage insurance which may further dilute the incentives insurers have for managing the road safety risk.

The impact of the regulation on safety depends on the extent to which insurers and insurance premiums could influence safe road use. One way in which this can occur is in influencing the choice of vehicle and safety features. For example, if premiums reflected the expected claims cost, people would have a financial incentive to use less aggressive and safer vehicles. With risk-based insurance premiums this financial incentive will be greater in value for those more likely to have a road-crash. Thus, in addition to influencing the choice of new vehicles (and the rate at which old unsafe vehicles might be disposed of), risk based insurance premiums could encourage safer use of existing vehicles. The safety of existing vehicles might also be increased through increased incentives to retro-fit safety technology (e.g. anti-collision devices).

A more significant impact is on how insurers can modify driver behaviour. Insurers have long provided financial incentives for maintaining a safe driving record. More recently, there has been an increase in usage based

insurance (UBI) whereby insurance premiums are based on *current* driving behaviour. UBI is made possible by telematics solution, solutions that integrate mobile computing and telecommunications, to enable driving behaviour to be monitored. Using this technology, drivers can provide insurers with evidence of their good driving to receive rewards and get feedback for themselves on their driving performance.

There are many examples. The insurer Progressive provides a UBI product in over 30 US states based on braking speed, distance travelled and the amount of night-time driving. In the United Kingdom (UK), there are numerous providers of UBI and there is significant variation in the service provided. For example, different UBI providers use different rating factors (including measures of aggressive acceleration and braking, mileage, speed, the time of day the vehicle is driven and cornering) and different types of rewards (including premium discounts on renewal, additional insurance cover and cash rewards to a pre-paid credit-card).

The limited evidence that is currently available on the effectiveness of UBI indicates that it can lead to significant improvements in safer road use. A UK insurer, insurethebox, tracked driving improvement among their customers (insurethebox 2012). They estimate that, after controlling for normal improvement in young drivers (as they gain more experience), the effect of telematics-enabled UBI was to reduce the rate of accidents involving young motorists (drivers aged 17 to 21) by 35 percent to 40 percent.<sup>6</sup>

The adoption of UBI appears likely to also lead to an overall reduction in average insurance premiums and thus on-road costs. The UK insurer, insurethebox reports<sup>7</sup> that the average premium saving by drivers taking out UBI is over £600 (≈\$875 per year). It is possible that this reflects some selection bias – that is some drivers taking out UBI were already careful drivers who are merely using UBI to demonstrate this. Nevertheless, the size of the reported savings and the reduction in accident rates reported suggest that average premiums would reduce with greater adoption. Furthermore there are ancillary benefits associated with UBI; for example, many UBI policies offer an anti-theft vehicle tracking service.

The UK is a useful case-study. In contrast to Australia and New Zealand, there is minimal price regulation of CTP insurance. Rather, in the UK, drivers obtain a combined personal injury and property damage insurance policy<sup>8</sup> and there are no caps on insurance premiums. Price is controlled by competition and insurers are free to provide discounts on premiums to encourage safer road use.<sup>9</sup>

After a slow start, there is now a rapid take-up of UBI in the UK. The British Insurer Brokers Association (BIBA 2012) estimated there were 12,000 active UBI policies in 2009 and 180,000 in 2012 and forecast (in 2012) there would be at least 500,000 UBI policies<sup>10</sup> within two years. The adoption of UBI is greatest among high risk groups<sup>11</sup> as these groups have the most to gain in terms of demonstrating safe driving behaviour.<sup>12</sup>

There is strong support for UBI in the UK and it appears possible (perhaps likely) that UBI will become the norm among high risk groups within the decade.<sup>13</sup> Given the constraining regulation, it appears very unlikely that there will be a similar level of adoption in Australia and New Zealand.<sup>14</sup> Thus, there is a strong possibility that in this

decade, in the absence of regulatory reform, Australia and New Zealand will fall significantly behind the UK in reducing the road-toll.

## Rationale for the existing regulation

So why does the regulation that constrains CTP insurance exist? The regulation may reflect the belief that insurers could not influence safety. However, as discussed above, this no longer appears to be the case.

A second reason is the risk that people would drive uninsured if premiums were uncapped. This is a significant concern in the UK where insurance premiums can be very high, particularly for young drivers. However, technology improvements, including national databases and number-plate reading technology, means that the risk of uninsured drivers is falling.

If CTP pricing in Australia and New Zealand were to become more cost-reflective, then prices for high risk groups would rise. However, the premiums need not be excessively high. With UBI, a young driver can pay a small insurance premium by driving a non-aggressive vehicle carefully and avoiding night-time driving. Furthermore, it would be possible to restructure existing cross-subsidies in a way that does not discourage road-safety; for example, by having an aged based subsidy.

The reforms to motor accident regulation could be significant. The benefits rely on flexible pricing and a competitive insurance market, which would be a major shift in regulation in many jurisdictions (e.g. where CTP insurance is provided by a government scheme). While in principle, there is no need to modify compensation policies to implement the proposed reforms, in practice, compensation arrangements, scheme pricing and the role of

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<sup>5</sup> A subsidy may be undesirable in itself to the extent that it is considered inequitable.

<sup>6</sup> There is some evidence from Australia. Greaves and Fifer (2010) ran a controlled trial in Sydney involving in-car technology that tracked vehicle movement. They found that in response to financial incentives people drove less and were less likely to speed.

<sup>7</sup> See <https://www.insurethebox.com/> accessed 12 April 2013.

<sup>8</sup> In the UK insurance third party insurance is also compulsory; vehicle users are required to be covered for third-party human and property damage liability.

<sup>9</sup> There are some important regulations on pricing. On 21 December, 2012, a European Court of Justice's ruling came into effect to prohibit taking gender into account when calculating premiums. This is expected to further encourage the adoption of UBI.

<sup>10</sup> Based on the relative size of the vehicle fleet this is equivalent to around 220,000 Australian UBI policies.

<sup>11</sup> Not surprisingly, UBI policies are generally targeted at young drivers and other high risk groups.

<sup>12</sup> In the UK, high risk groups can pay higher insurance premiums. For example, the AA British Insurance Premium Index Quarterly Report (Quarter 1 2011) reported the average premium for males at different age groups ranging £467 to £3052. The true variation may be understated as high risk groups are more likely to take out a minimum level of cover.

<sup>13</sup> A UK company, Gocompare.com, reports that in a 2012 survey (sample size 2008) "57% of drivers believe they will switch to a telematics or black box insurance policy by 2017". Source <http://www.gocompare.com/car-insurance/telematics-car-insurance/>, accessed 12 April 2013.

<sup>14</sup> At present there are no telematics based UBI offerings in Australia like that in the UK. AAMI provide a discount on car insurance to customers who take-up the offering by betterdriver (see [www.betterdriver.com](http://www.betterdriver.com)), a telematics based service that provides feedback on driving but the data is not used by the insurer for setting premiums.

private insurers are closely linked. Finally, if reform were undertaken, transition arrangements might be considered whereby the price changes might be modified slowly over time.

## Insurers as regulators

The reforms discussed would lead to private insurers undertaking a much greater role in road-safety regulation and enforcement. For example, in the UK, UBI insurers are involved in researching and identifying unsafe driving practices (e.g. aggressive braking and acceleration), setting penalties and rewards,<sup>15</sup> monitoring behaviour (using telematics technology) and enforcement (through application of penalties).

There are significant advantages in having private insurers as road-safety regulators and enforcers. Relative to traditional enforcement (e.g. police, speed cameras), telematics offers a clear advantage in having constant, real-time monitoring and enforcement. In theory, it might seem possible for governments to employ telematics technology. However, whereas people willingly offer their driving behaviour information to insurers to get lower insurance premiums, it seems likely that privacy concerns would restrict governments from collecting such information.

Regardless, there are other reasons for wanting private insurers involved. Insurers can more flexibly trial different programs. Importantly, with the right incentives, insurers would compete to innovate and find the best programs that achieve safety goals without being overly burdensome or unreasonably restricting freedoms. Those insurers that failed to determine and enforce the safe driving practices would face higher claims costs and be forced to modify their practice. Those insurers that enforce unnecessary burdensome conditions would lose business to those that didn't.

We might question for what purposes — aside from ensuring that drivers are insured — are there advantages to traditional road-safety regulation and enforcement over private insurance markets. The answer may be very little. Rather, relative to existing regulation and enforcement, an insurance market-based approach has potential to be more efficient, fair and effective. A step change improvement — potentially a 'silver-bullet' solution — to road-safety (while reducing the burden of road-safety regulation) may be achieved through greater insurance industry involvement.

However, getting the full value of the insurance industry in road-safety would require getting the incentives right. Even with the aforementioned reforms, the value of preventing a road-crash would be much greater than the claims liability which provides the insurance industry with its incentives for road safety. There appears no reason why this gap in incentives could not be addressed through reforming CTP

insurance regulation. However, how this may be achieved is beyond the scope of this paper.<sup>16</sup>

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<sup>15</sup> At the time of writing, the UK insurer iKube ([www.ikubeinsurance.com](http://www.ikubeinsurance.com)) set a £100 pound penalty for driving between 11pm and 5am.

<sup>16</sup> This article draws from a prior conference paper by the author presented at the ACRS 2012 National Conference (Tooth 2012). That paper discusses in more depth the issue of insurer incentives and reforms to give insurers the desired incentives for road-safety.