

Regulating road-safety and autonomous vehicles

Time for an insurance market approach?

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In a nutshell: Rationale for insurance market reform

- There's a lot insurers can do on road-safety...
- and much more effectively than Government

Whether we drive
What we drive
How we drive

Current incentives for insurers for road-safety are far less than optimal

Three hypotheses

- 1. [By a large margin] The most significant cost-effective policy to reduce the road toll involves reforming vehicle insurance markets**
- 2. Vehicle insurance market reform provides a cost-effective means to managing most key road safety issues relating to safe vehicles [inc. Autonomous vehicles], speeds and road-users**
- 3. We cannot cost-effectively meet road-safety goals without reforming vehicle insurance markets**

What's the underlying problem?

Perceived ‘cost’ to the individual of their risky behaviour is less than the cost to society

- We impose costs on others (Externalities)
- We’re overconfident (Behavioural bias)

The value of safety

With regard to valuing human costs

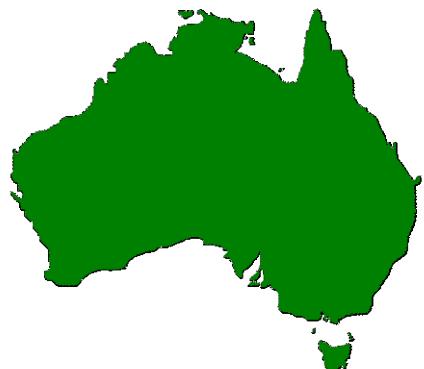
- We don't value a person's life
- ...we value reducing *small* risks to life

Work with the Value of a Statistical Life (VSL)

- E.g. \$700 to remove a 1 in 10,000 chance of death then $VSL = \$700 \times 10,000 = \$7m$

Average CTP claim for a fatality ~\$0.2m

Motor vehicle insurance

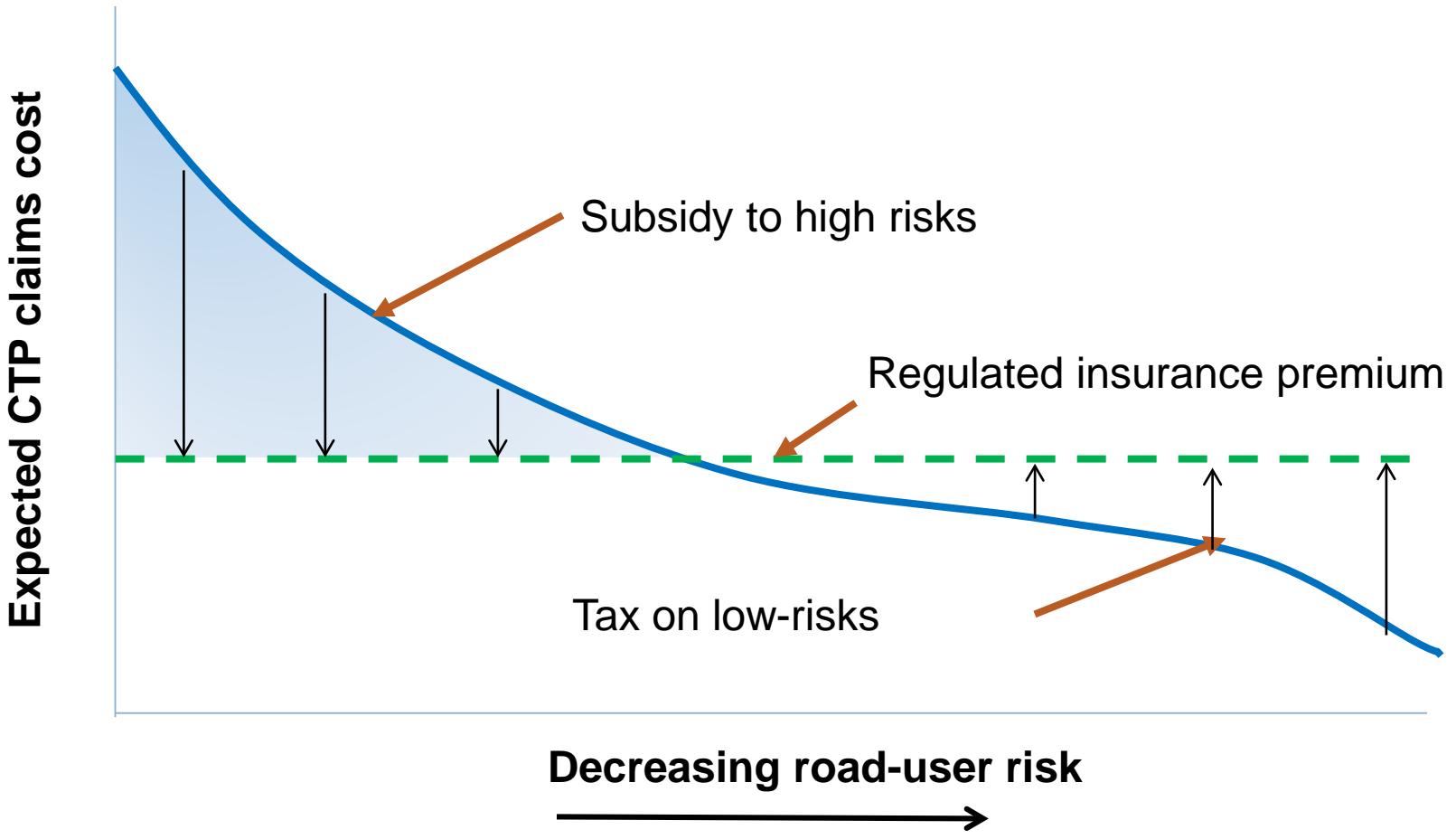


- CTP insurance separate from motor vehicle insurance
- Limitations on CTP pricing



- One (bundled) insurance product
- No material limitation on pricing

Australia's CTP regulation (relative to UK): Tax safe road-use and subsidise unsafe use



Does it matter?

- Kelly and Li, (2008)*
*The U.S. conclusions are unanimous [...] **more stringent rate regulation** is associated with [...] incentive distortions **resulting in higher insured loss costs** and in the end, **higher premiums overall***
- 2013 survey of 161 members/former-members of ARIA
 - *expert opinion **strongly favors** the idea that auto insurance **prices** should closely **reflect a driver's accident risk** and **be determined by competitive market forces***

*Kelly, M., & Li, S. (2008). The Impact of Rate Regulation on the Performance of the Canadian Property/Casualty Insurance Industry. Wilfrid Laurier University Working Paper

Important developments

- Safety technologies
 - Advanced driver assistance systems (ADAS)
 - Autonomous vehicles
 - Telematics
- Transport alternatives
 - Mobility as a services

Whether to drive

Encourage high-risks to use alternative transport

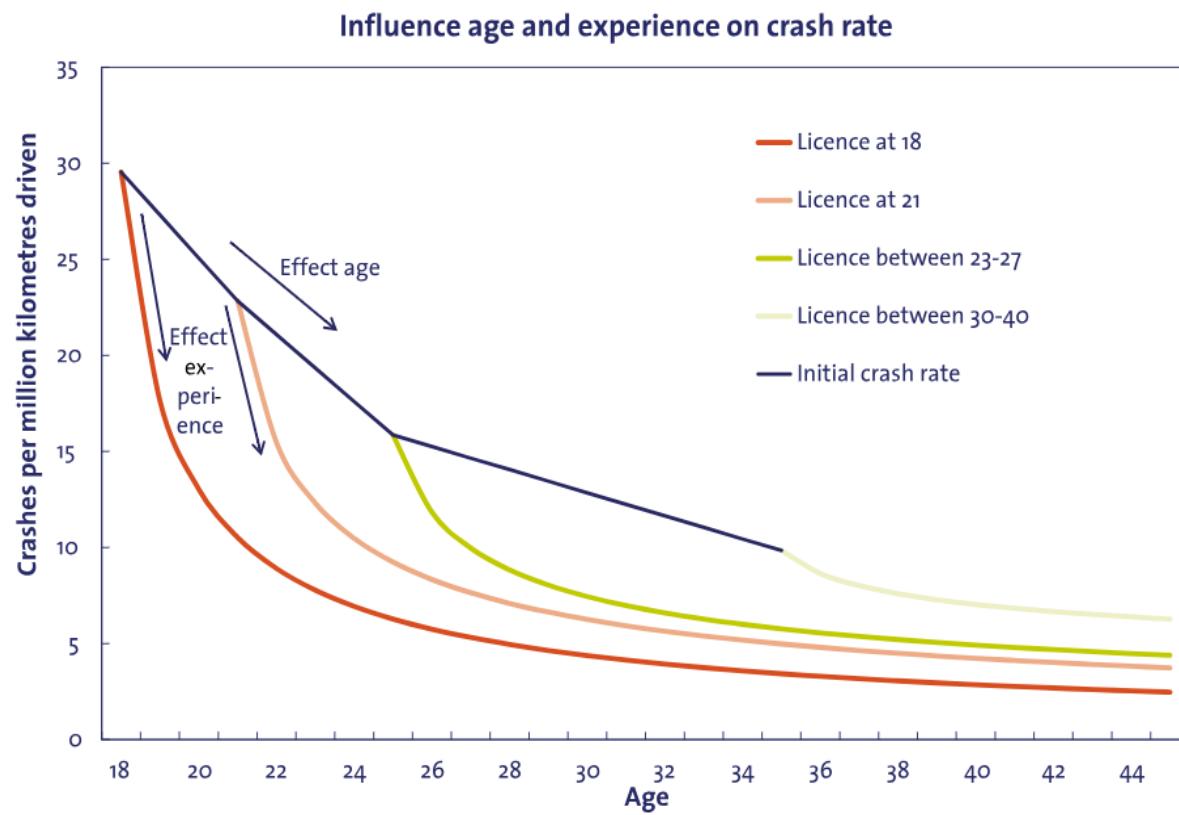


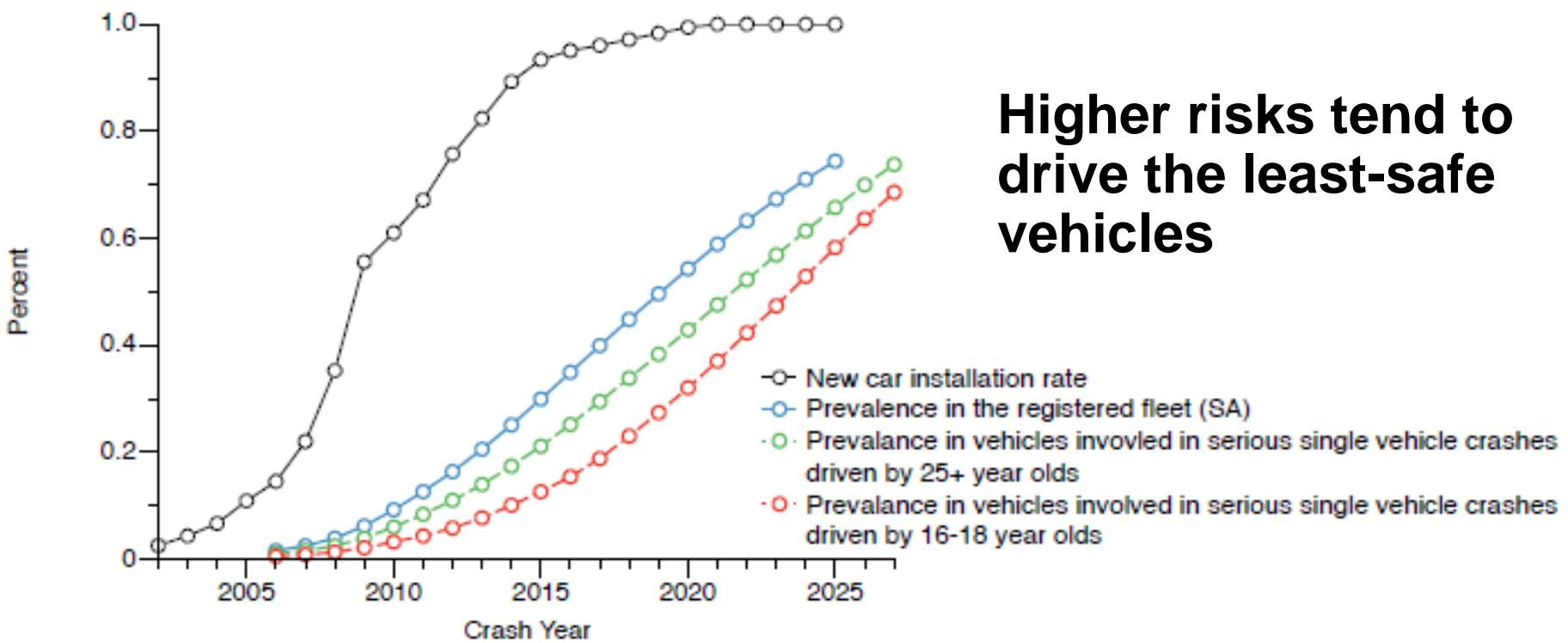
Figure 2. Decrease in the crash rates of novice drivers starting their driving career early and novice drivers starting their driving career later or late (based on self-reported crashes and self-reported distance travelled [5]).

SWOV (2016). 18- to 24-year-olds: young drivers. SWOV Fact sheet, May 2016 , The Hague.

What to drive

Encourage use of safer vehicles

New car installation rates and penetration rates for Electronic stability control



Higher risks tend to drive the least-safe vehicles

Anderson, R. W., Raftery, S., Grigo, J., & Hutchinson, T. P. (2013).
Access to safer vehicle technologies by young drivers: Factors affecting motor vehicle choice and effects on crashes. CASR118. Adelaide, Australia: Centre for Automotive Safety Research.

What to drive

Encourage use of safer vehicles

- Increased incentives for drivers to adopt safer vehicles and technologies
- Highest risks receive largest incentives for safer choices

“Tesla® Drivers Can Now Earn up to 12% off Insurance Rates Due to Increased Safety of Autopilot.” (US – Root insurance)

Autonomous emergency braking in the UK

AEB as an option costs in the order of £1000.

Average premium discount for AEB

- Drivers aged 45+ was £10
- Drivers aged 17-24 was £313 See report for details

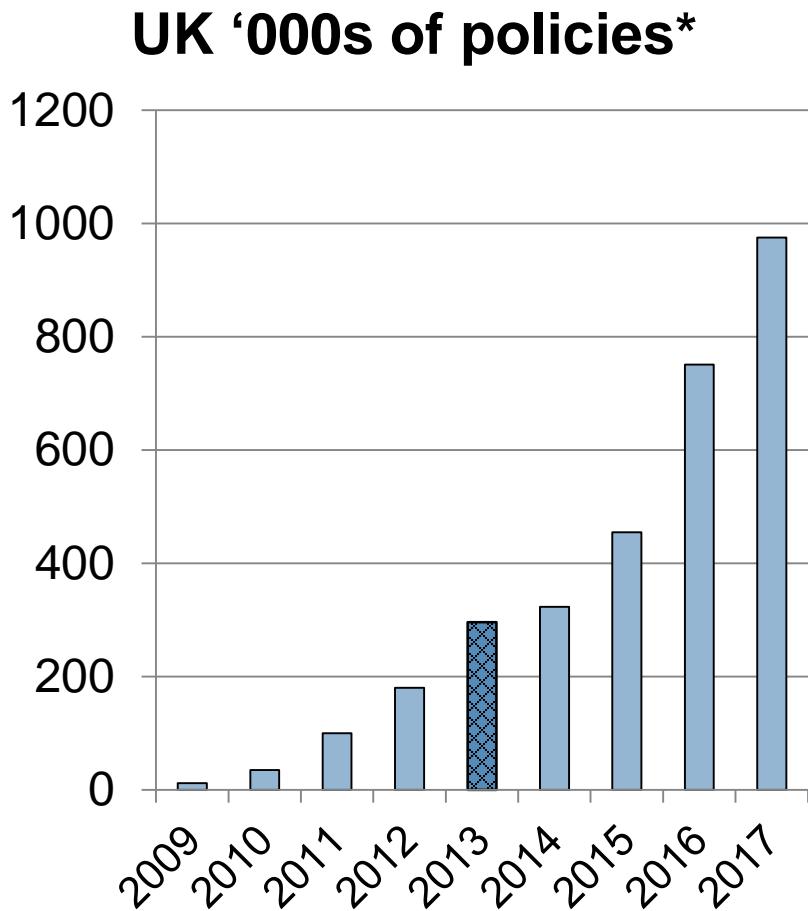
The benefits of insurance reform on adoption of safety technologies

- Increase demand for safety technology
- Potential to displace regulation that hinders innovation and adoption

How to drive Insurers reward safer driving

- Traditional approach:
 - Deductibles to share risk
 - No-claims bonuses
- Now/emerging
 - Telematics-based usage-based insurance (UBI)
 - Research: reduced crash risk by 20%+
(up to 35-40% in young drivers).

Usage based insurance in the UK



Research by LexisNexis Risk Solutions strongly supports the safety benefits of telematics and concludes that telematics insurance **has done more to cut accident risk than any other road safety initiative aimed at the young driver market.***

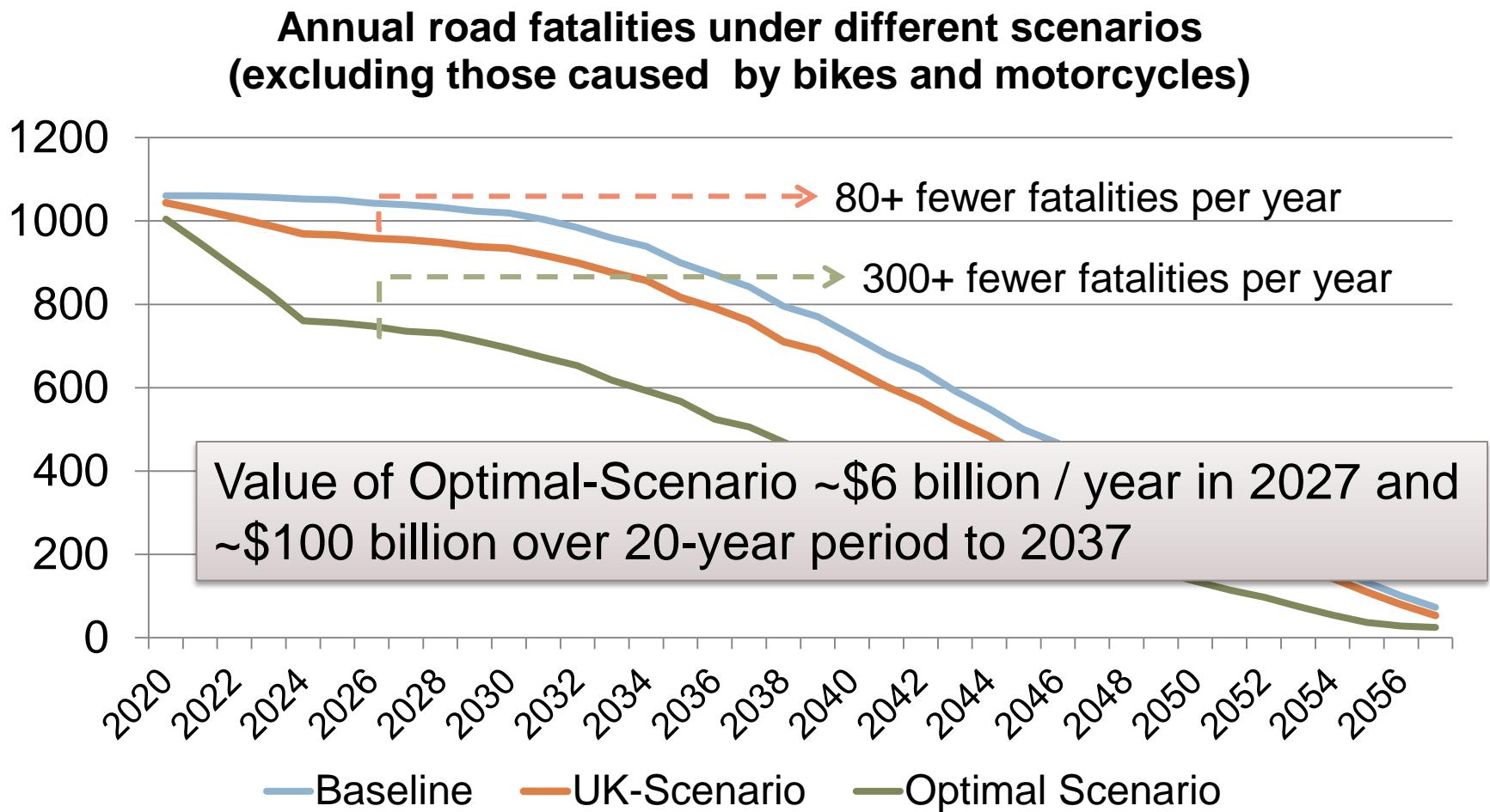
* BIBA [British Insurance Brokers' Association] (2018), BIBA Research on Telematics market, <https://www.biba.org.uk/press-releases/biba-research-reveals-telematics-almost-reach-one-million-mark/>

Estimating the benefits for Australia

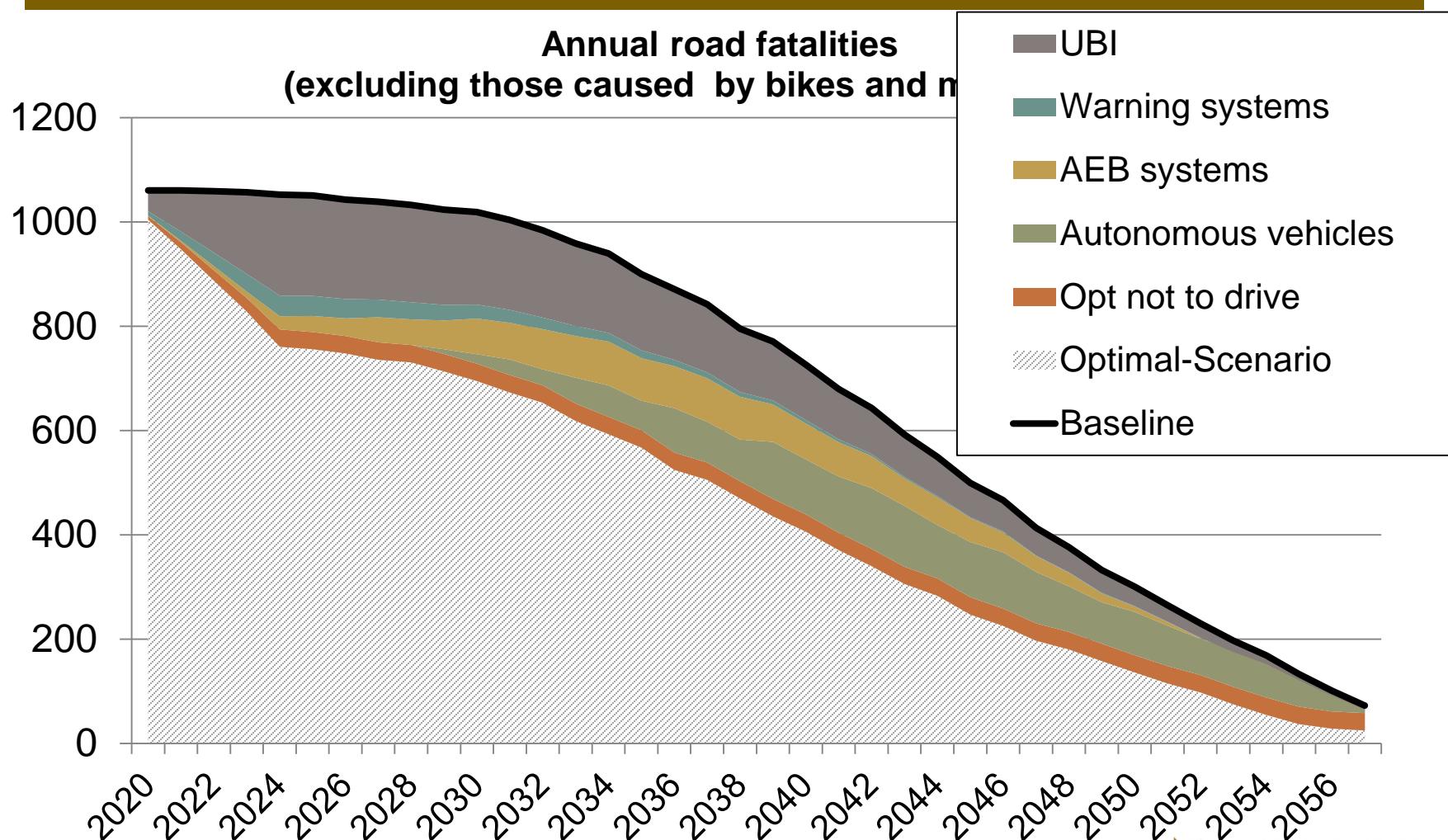
- **Scenario 1 (the “UK-Scenario”)**
 - Insurers have liability for bodily injury and property damage claims and can price premiums based on individual risk
- **Scenario 2 (the “Optimal-Scenario”)**
 - Insurers have the societally optimal incentives for safety

**“Prediction is difficult,
especially about the future”**

Estimated safety benefits



Source of benefit





Why a market based approach?

The discipline imposed by competition

- Innovation and flexibility
- Targeted risk management – Marketplace rewards those who manage risks efficiently
- Privacy – Its opt-in, consumers have choice

Other costs and benefits

Costs

- Additional expenditure by insurers on risk management
- Transition costs

Benefits

- Less vehicle use (congestion & environment)
- Supplementary technology benefits
- Potential to reduce cost of other regulations

The key concerns

- The high risks will pay more
 - But UBI /other choices mean its manageable
 - Could transition/ cross-subsidise on age etc
- Uninsured driving
 - Evidence suggests a minor issue if at all
- Privacy / ‘big brother’
 - Not an issue in UK etc

Fairness?

Opposition calls on ACT to rule out P-plater curfew
“...a very **unfair** attack on young people,...”

Over 300,000 NSW driving licences revoked for fines non-payment

Elderly drivers: Grieving family calls for greater political courage to deal with 'growing deadly problem'

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