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IMPACTS OF CHANGING USED IMPORT VEHICLE VOLUMES ON AUSTRALIAN AND NEW ZEALAND VEHICLE FLEET SAFETY

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Abstract:

There are potentially important safety effects of increasing or decreasing sales of used imported vehicles in Australia and New Zealand. Approximately half of the current New Zealand light passenger fleet originated as used vehicles from overseas. Australia currently has a used import program managed under the Commonwealth Government concessional vehicle scheme: used imports currently constitute less than 2% of the total vehicle imports annually. As a proportion of the licensed fleet, concessional vehicles make up a mere 0.2%. This paper uses estimates of the safety of such vehicles in Australia and New Zealand compared to those sold new to predict safety effects of policies around vehicle importation. Compared to business-as-usual, several scenarios were tested to inform policy considerations.

Using New Zealand fleet data 2003-2014 decoded into vehicle clusters and identified according to origin (sold new or imported used), both primary and secondary safety were assessed. For Australia, data on crashed drivers, their injuries and vehicles driven were analysed from Police reported crash data for the years 2008-2012 for Western Australia, South Australia, New South Wales, Queensland and Victoria. This dataset also identified concessional imports. Data from 2012 was used as the baseline crash year in modelling safety effects of scenarios.

For the New Zealand fleet, for any given year of manufacture and market group, there was little difference in the safety of vehicles according to their origin. So merely changing the proportions of used imported vehicles in the fleet of a given age would have little effect on safety per se. If, however, there were other effects from reducing access to used imports, such as increased motorcycle usage, there could be significant reductions in safety. For Australia, expanding the used import program effectively increased the average age of the fleet, with secondary safety deteriorating under the scenarios tested with estimated increases in deaths and serious injuries between 4% with a 100-fold increase in the number of concessional vehicles and 15% if the majority of vehicles were concessional. Analysis showed that it would be possible to theoretically reduce serious road trauma by up to 13% through a used vehicle import program but only if used imports were restricted to only the very safest vehicles available which is unlikely to be achievable.

Key Words:

Road safety, used vehicles, used imports, light passenger fleet, concessional vehicles, primary safety, secondary safety, crash data, safety effects, injury, statistics

Disclaimer

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Preface

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Contributorship Statement

- A/Prof Stuart Newstead: Project conception, data analysis, review and management of final version of report
- Dr Mike Keall: Data assembly, analysis design, preparation and statistical analysis of datasets, manuscript preparation
- Linda Watson: Data assembly, analysis design, preparation and statistical analysis of datasets, manuscript preparation
- Laurie Budd: Data assembly, analysis design, preparation and statistical analysis of datasets, manuscript preparation

Ethics Statement

Ethics approval was not required for this project.

PROJECT HIGHLIGHTS

Background

- Australia currently has a used import program managed under the Commonwealth Government concessional vehicle scheme: used imports currently constitute less than 2% of the total vehicle imports annually. As a proportion of the licensed fleet, concessional vehicles make up a mere 0.2%.
 - There are periodically calls to expand this program to provide access to cheaper vehicles.
- New Zealand has had a used vehicle import scheme for over 25 years, originally introduced to try and lower the average age of the fleet as well as to discourage motorcycle use.
 - Approximately half of the current New Zealand light passenger fleet originated as used vehicles from overseas.
- This study quantified the safety impacts of the current used import programs in each country and the potential safety impacts of either reducing or expanding the current programs.
 - For New Zealand, key scenarios examined included:
 - What changes in safety would occur if the age distribution of the vehicle fleet were the same as prior to the used importation programme?
 - What would happen if used imports became less available including potentially leading motorcycle usage commensurate to before the used importation programme became established?
 - For Australia, key scenarios examined included:
 - What effects on safety might occur if used imports were much more common?
 - What safety impacts would accompany a fleet with the same age distribution as has occurred in New Zealand, undoubtedly influenced by widespread used vehicle importation?

Key Findings

- New Zealand
 - Comparing vehicles of the same year of manufacture, there is little difference in safety performance of New Zealand used imports to vehicles sold new. However, the age profile of the NZ fleet has changed since the introduction of the used import program with proportionately fewer newer vehicles in the fleet.

- If the current NZ vehicle fleet had the same age profile as the fleet in 1990 the fatality and serious injury rates would be reduced by around 7% (equating to around 146 fatalities and serious injuries).
- This suggests that the used import program has been detrimental to road safety in NZ and significant gains in safety could be made by reducing the number of used imports hence increasing the proportion of new vehicles on the road.
- However, increasing the proportion of new vehicles in the NZ fleet must not come with the consequence of increasing motorcycle use. The potential safety benefits of increasing the number of new vehicles in the NZ fleet back to 1990 levels would be completely offset if total motorcycle travel exposure doubled (from the current 1% of all travel to 2% of total travel).
- Australia
 - Expanding the used import program in Australia would most likely increase the average age of the fleet:
 - A 100 fold increase in the number of used imports was estimated to increase deaths and serious injuries by 4%.
 - If the majority of vehicles in the fleet were used imports similar to those currently imported under the concessional scheme, increased deaths and serious injuries of 15% were estimated.
 - It would be possible to theoretically reduce serious road trauma by up to 13% through a used vehicle import program but only if used imports were restricted to only the very safest newer vehicles available which is unlikely to be achievable.

Conclusions

- It is likely that further expansions of the used import programs in Australia or New Zealand would increase the average age of the vehicle fleet hence reducing overall safety unless only the safest newer used vehicles were allowed to be imported.
 - Although used import programs should result in consumers purchasing newer, safer vehicles for the same price, the New Zealand experience shows that consumers have instead chosen to spend less by purchasing older vehicles which have become available through the used import schemes hence increasing the average fleet age and reducing safety.
- The overall impact of changing the proportion of used vehicles imported into the vehicle fleet must be conscious of the potential flow-on effects on motorcycle usage which and swamp the intended impacts of changing used import quotas. This would need to be considered carefully if lowering the proportion of used imported vehicles sold in New Zealand.