



EXECUTIVE INSIGHTS

Mobility Trends and Road Pricing in Australia

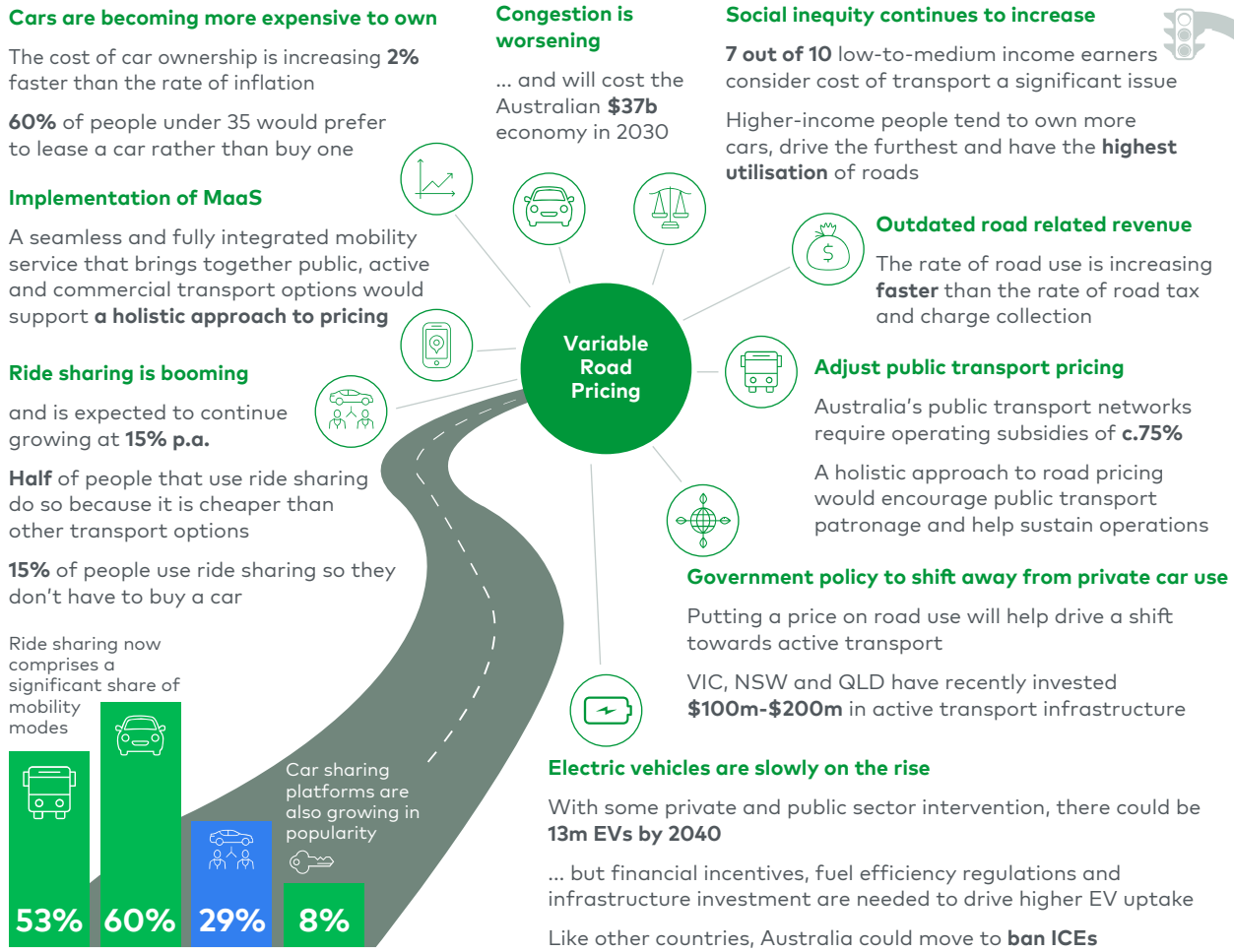
Introduction

Decades' worth of research calls for road pricing reform to manage road use with the right economic signals. The various policies enacted to date to influence mobility choices — across both private and public transport — have not been designed to act in concert and have created a complex mobility environment that is difficult for both consumers and policymakers to navigate effectively and drive the desired financial, economic, social and environmental outcomes (see Figure 1).

While it is recognised that there are many challenges for policymakers associated with implementing road pricing reform, the need for a new approach is growing, with trends in consumer mobility behaviour increasing the gap between the current state and an optimum approach.

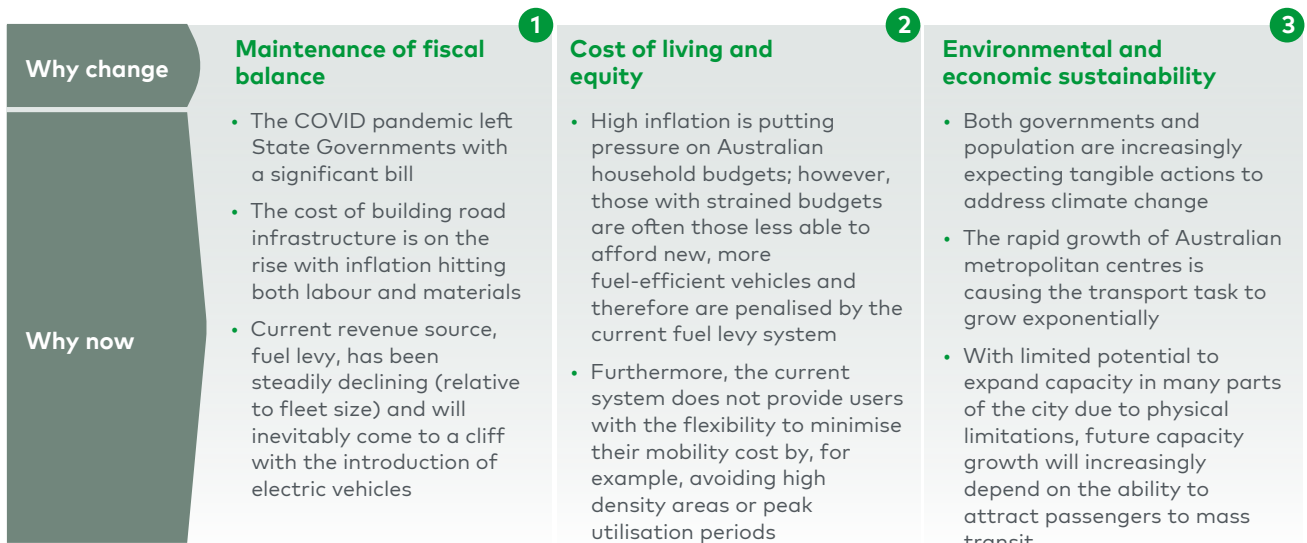
At present, there are three reasons making comprehensive road pricing reform necessary and urgent (see Figure 2).

Figure 1
Overview of variable road pricing



Note: MaaS=mobility as a service; EV=electric vehicle; ICE=internal combustion engine; VIC=Victoria; NSW=New South Wales; QLD=Queensland
Source: L.E.K. research and analysis

Figure 2
Top reasons for pricing reform



Source: L.E.K. research and analysis

Road pricing reform would provide the flexibility needed to equitably align mobility costs to road use in the context of the mobility trends set out above. Furthermore, reform would give transport and infrastructure providers the required levers to optimise the utilisation of assets and services across mobility modes.

Maintenance of fiscal balance

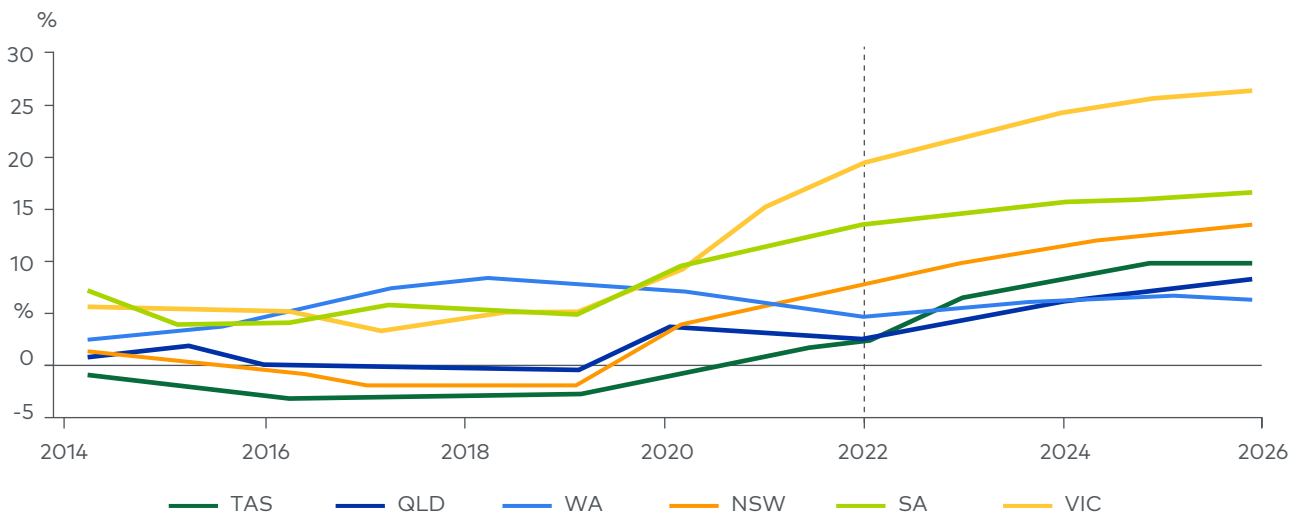
1. Growing debt

Australian state governments are currently sitting on the highest level of debt seen in recent Australian history, and projections indicate that the fiscal situation will deteriorate further.

This growing debt was driven by a combination of factors, notably the cost of funding an aggressive infrastructure investment agenda and an unforeseen need to fund stimulus measures during the COVID-19 pandemic.

One of the main challenges with the current fiscal situation is that a large portion of the debt is tied to long-term projects that have already been initiated, making it difficult for governments to unwind these investments without losing significant value from the capital already deployed (see Figure 3).

Figure 3
Net state government debt as a percentage of gross state product



Note: VIC=Victoria; NSW=New South Wales; QLD=Queensland; SA=South Australia; WA=Western Australia; TAS=Tasmania
Source: State Budgets, ABS

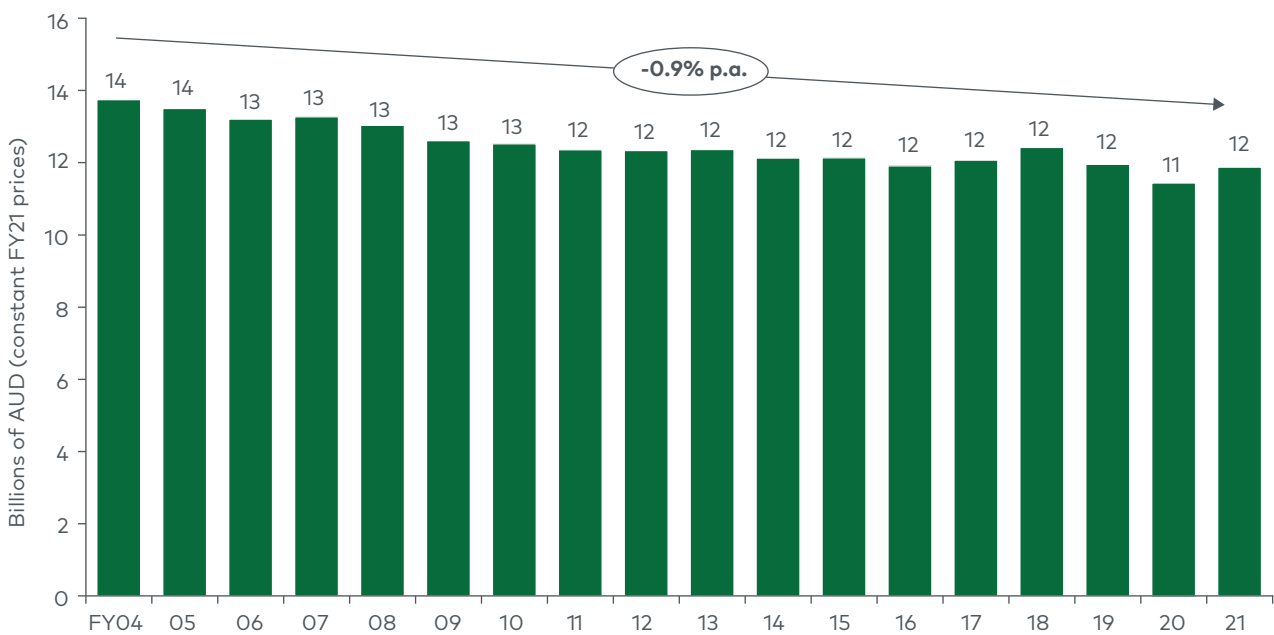
The trajectory of state debt is further challenged by ongoing inflation and high prices of construction inputs, which exacerbates the already high costs of maintaining road infrastructure.

To improve their fiscal position, state governments will need to make difficult cost decisions, tightly manage costs of the projects that continue going forward and improve revenue generation and collection.

2. Declining fuel excise

Notwithstanding the need to improve the fiscal position, the government also faces challenges on the revenue side of the equation as the sustainability of the existing fuel excise scheme is being challenged. Real excise revenue declined at an average 0.9% p.a. from FY2004 through FY2021,¹ whereas vehicle usage (measured in vehicle kilometres travelled) grew by 1.1% p.a. over a similar period² (see Figure 4).

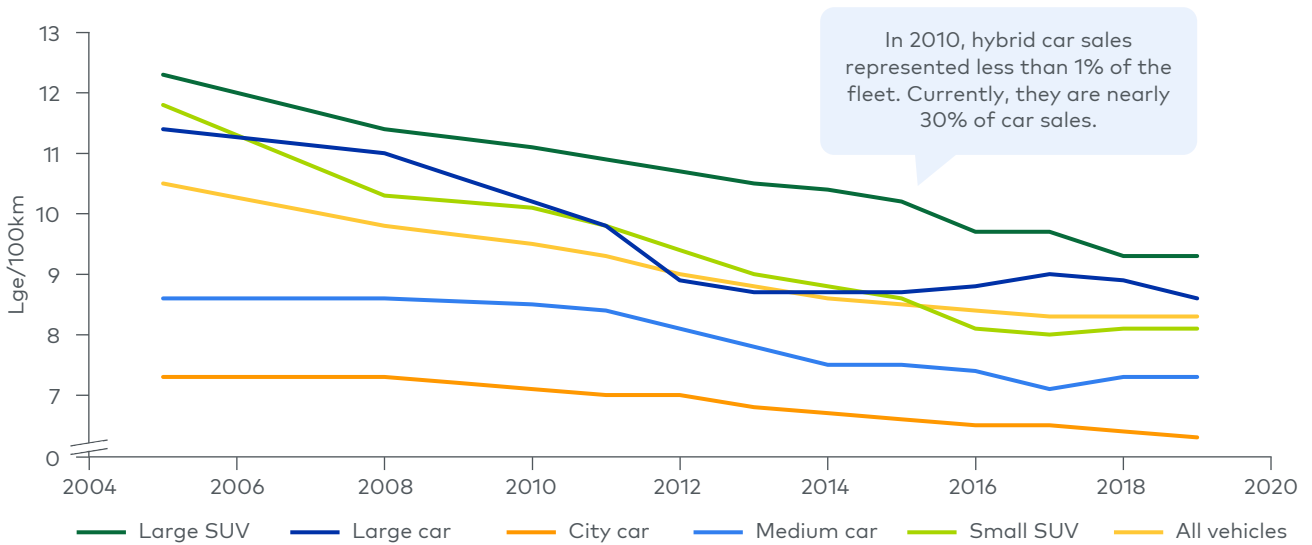
Figure 4
Fuel excise gross revenue (FY2004-2021)



Source: BITRE; L.E.K. research and analysis

The decline is mainly driven by a significant improvement in vehicle efficiency. Whether it is due to continuous improvements in conventional engines or the introduction of hybrid technologies, average fuel efficiency has improved markedly over the past 15 years or so (see Figure 5).

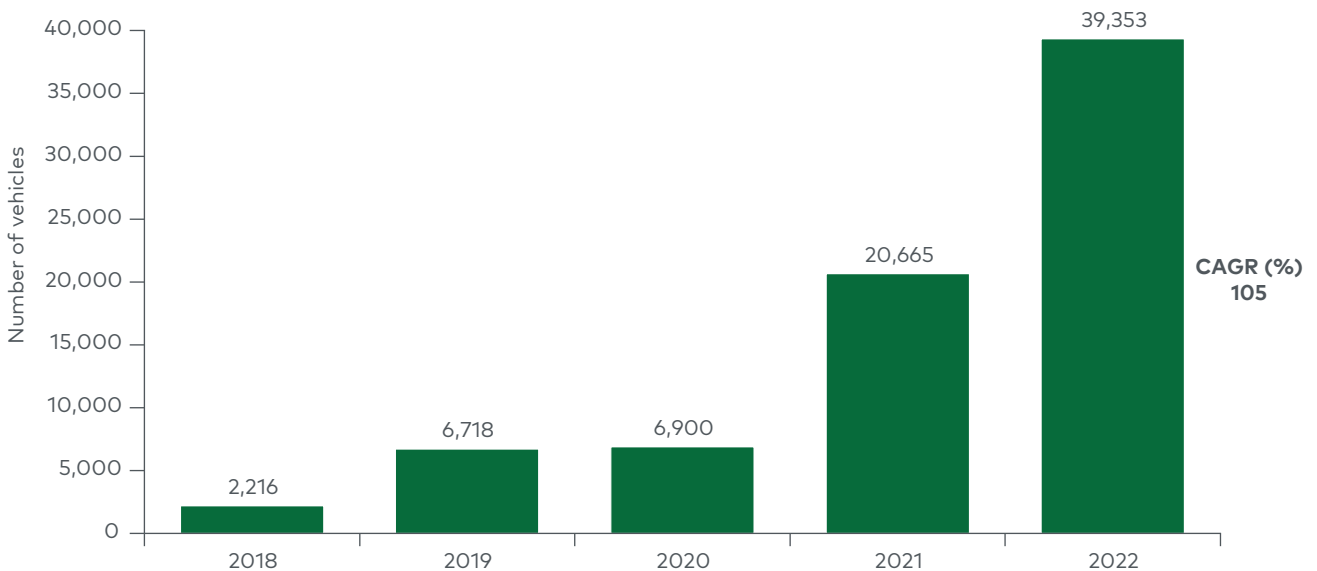
Figure 5
Fuel consumption by vehicle segment, all powertrains* (2005-2019)



*Includes all powertrains, with fuel consumption in diesel and petrol exhibiting the most significant declines by powertrain across the time period electric and hybrid remained relatively flat
Source: IEA; L.E.K. research and analysis

Furthermore, it is worth noting that sales of electric vehicles (EVs) are only now gaining momentum, and therefore the improvement in average vehicle efficiency is bound to accelerate, causing further declines in fuel excise revenue. To put it in perspective, EVs made up 8.8% of the total vehicle sales for June 2023,³ up from 2.2% in the first quarter of 2022 (see Figure 6).

Figure 6
New electric vehicles purchased in Australia (2018-2022)*



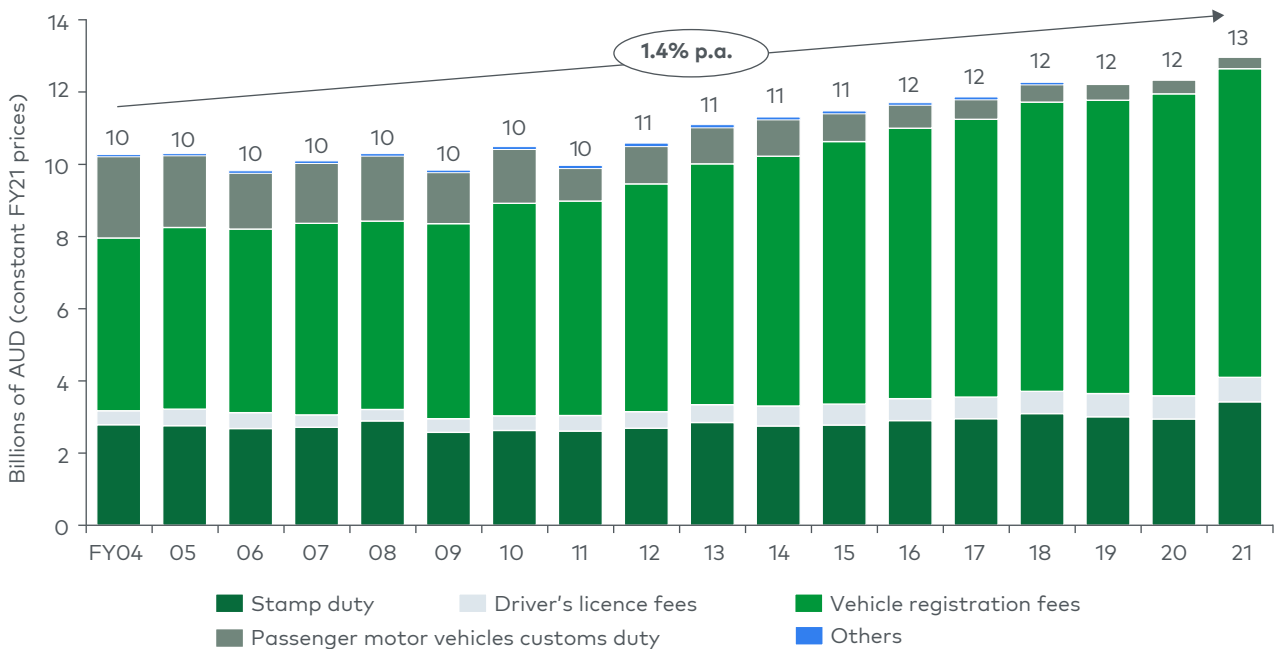
*Includes BEV and PHEV
Note: CAGR=compound annual growth rate; BEV=battery electric vehicle; PHEV=plug-in hybrid electric vehicle
Source: Australian Electric Vehicle Industry Recap 2022; Electric Vehicle Council

By replacing the rapidly declining fuel excise leakage and more directly linking the cost of road infrastructure to the demand for it, a comprehensive road user charge mechanism is likely the best way to improve the sustainability of the government’s fiscal position within the transport ecosystem.

3. Threats to licensing and registration revenue

In addition to fuel excise, governments rely heavily on licensing, registration and other vehicle related fees. Combined, those fees make up around half of total road-related revenues. These fees have been growing consistently over the past few years, driven mainly by a growing car fleet (see Figure 7).

Figure 7
Road-related revenue excluding fuel excise (FY2004-2021)



Source: BITRE

However, consumer behaviour is shifting towards a more variable approach to transport spending, facilitated by innovative companies that have disrupted the traditional way we think about transport costs.

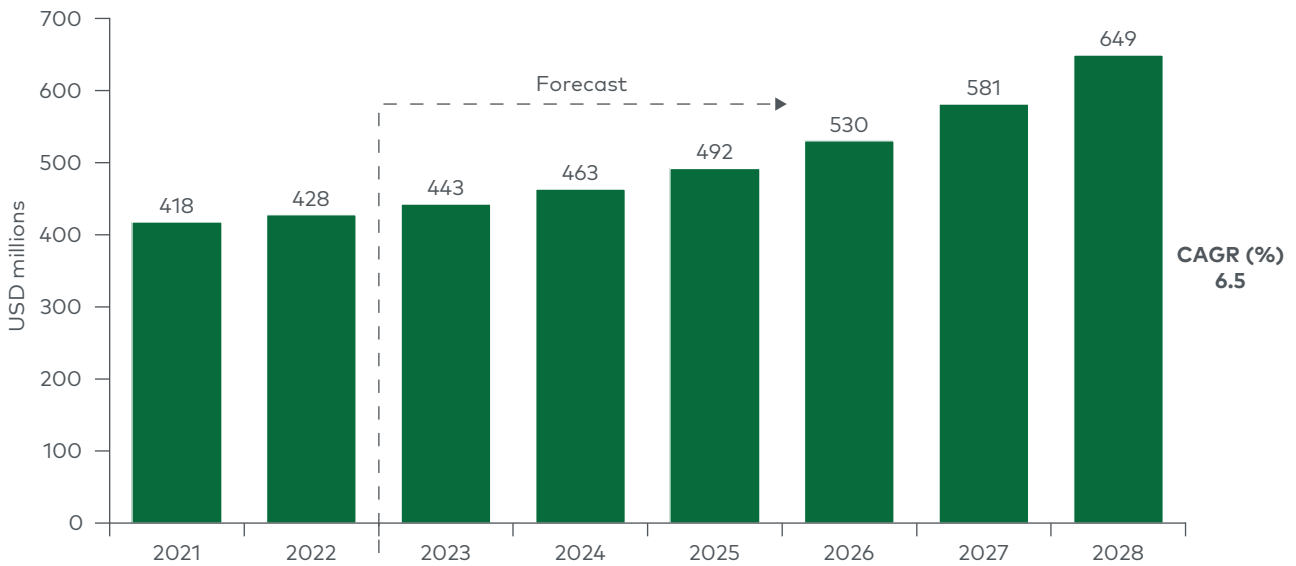
Car sharing companies such as GoGet and Car Next Door provide consumers access to cars for personal use when they need them on a subscription and/or pay-for-what-you-use pricing model. Consumers are able to avoid the fixed costs associated with car registration and insurance, reducing their reliance on the car and freeing them up to compare the cost of each journey across different mode options.

Ride sharing companies such as Uber and Ola have disrupted the mobility market, leveraging technology to provide an easy-to-use and cost-effective service that is

equivalent to taxis. In 2019, 22.9% of Australians were using Uber, surpassing the usage of taxis and displaying a significant increase compared with 6.6% in 2016.⁴

Uptake of these services continues to grow, and companies continue to innovate to provide variable pricing models based on varying service levels, such as Uber Pool and Uber X. Despite a short-term drop in ride sharing usage due to COVID-19, revenue from ride sharing services is expected to grow at 6.5% from 2021 to 2028⁵ (see Figure 8).

Figure 8
Ride sharing revenue in Australia (2021-2028F)



Note: CAGR=compound annual growth rate
Source: The Insight Partners, Asia Pacific Ride-Hailing Service Market Report (2022)

The growth of shared mobility is expected to gain further momentum as mobility-as-a-service models are adopted and further facilitate the replacement of personal vehicles with mobility options that meet a range of price and convenience needs.

L.E.K. Consulting’s own Annual Mobility Survey found that 20% of respondents have sold or considered selling their vehicle without replacement in 2022,⁶ which aligns with the progressive move toward subscription-based models and therefore further supports the existence of the risk to licensing and registration revenue.

The good news is that holistic pricing of transport should become easier in the future, as private ownership of cars decreases — pricing can be based on usage for all modes, with no cost of ownership. This will support the provision of holistic, appropriate pricing signals to support the right mode choice decisions.

Cost of living and equity

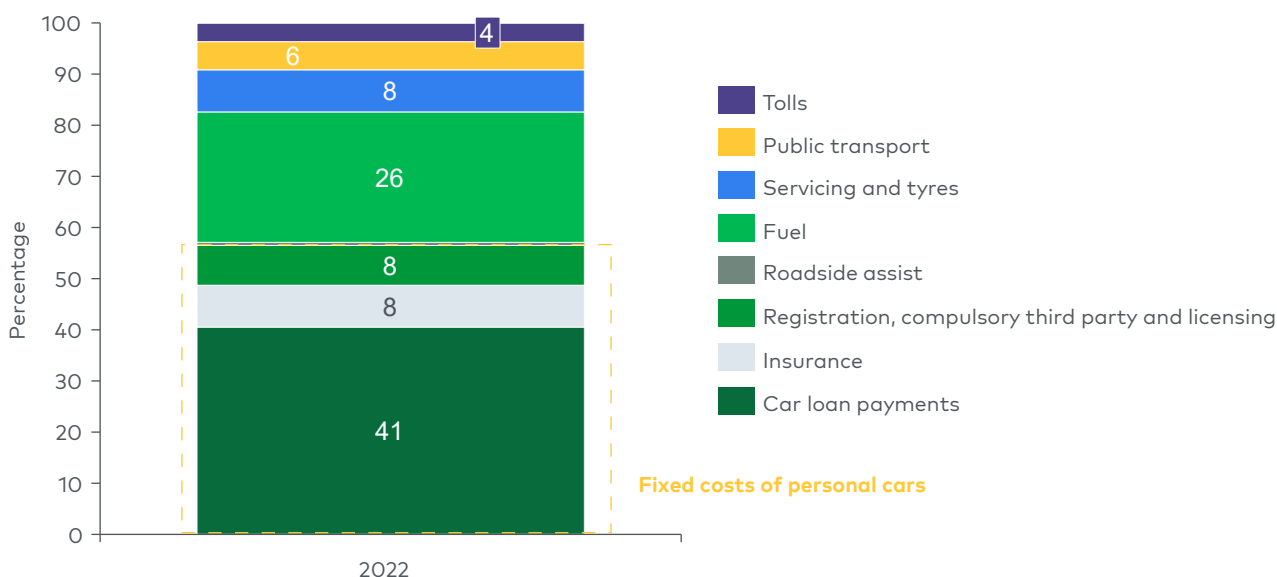
The equity with which costs are shared among users of mobility assets is increasingly under threat. Variations in vehicle fuel efficiency limit the fair application of fuel excise, and

the levy completely fails to capture EVs, which are poised to account for an ever-increasing share of the Australian fleet in coming decades. This could lead to a situation where lower socioeconomic groups are driving less efficient internal combustion engine (ICE) vehicles and paying more in fuel excise while higher socioeconomic groups pay less due to access to the more efficient (but more expensive to purchase) ICEs or EVs.

Variable road pricing can foster a more equitable approach that creates a direct tangible link between the quantum of road use and the price paid, eliminating the distortions caused by the vehicles’ characteristics in the current fuel excise system.

In addition to addressing the inequities caused by fuel excise, a redesigned variable road pricing can also offer a fairer alternative to today’s fixed costs associated with car ownership (e.g. car registration, licensing), which account for more than 50% of total costs and are borne equally regardless of road use (see Figure 9).

Figure 9
Total transport costs, national average (FY2022)



Source: Australian Automobile Association (AAA); Transport Affordability Index (2021-22)

According to the Australian Institute of Family Studies, affordability of transport is a key issue driving transport disadvantage for older citizens and those on low incomes.⁷ Variable road pricing could help reduce costs for those who drive fewer kilometres than average. Making driving cost variable could also allow households to reduce usage at times when cost savings are needed.

Environmental and economic sustainability

Over recent years, state governments have implemented a number of initiatives to increase uptake of alternative, more environmentally friendly modes of transport, such as cycling and public transport. With one of the biggest barriers to cycling adoption

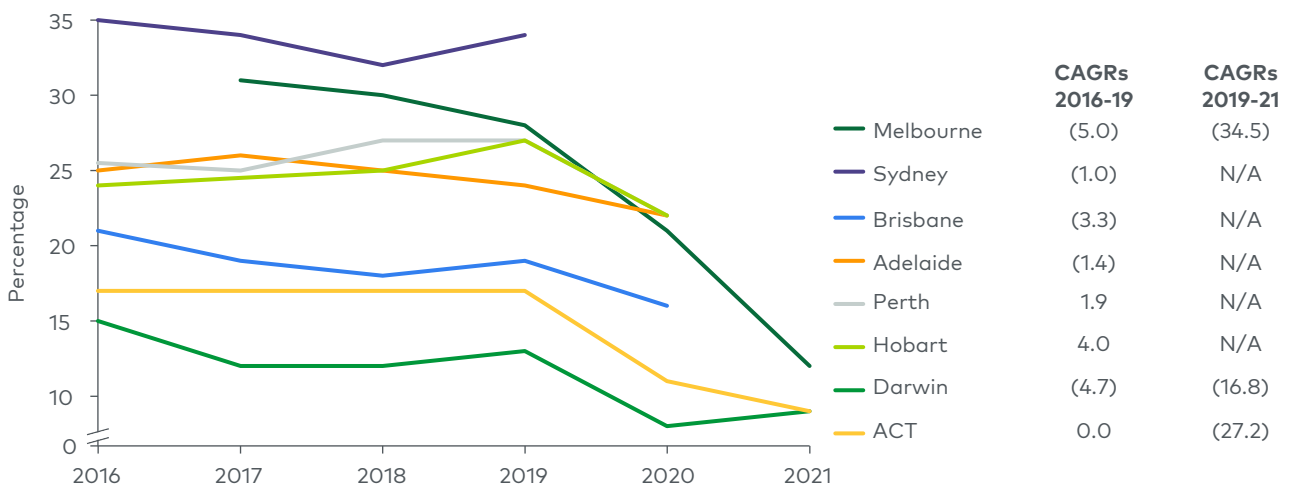
being infrastructure, the New South Wales (NSW), Victoria (VIC), Queensland (QLD) and Western Australia governments have each pledged significant investments in pedestrian and bike infrastructure. The NSW government announced an investment of c.\$950 million to be allocated between 2021 and 2026,⁸ while the VIC government has opted for a series of targeted investments, totalling c.\$70 million, to be completed by 2023.⁹

However, the current road pricing structure is limited in its ability to incentivise people onto active and public transport systems. With road use not directly priced, governments are forced to discount public transport pricing to provide the desired relative price signals, resulting in very low levels of public transport cost recovery to help support infrastructure investment.¹⁰

Consequently, public transport systems in Australia are under pressure to cover operating costs, often requiring subsidies of between 67% and 81%, depending on location¹¹ (or even higher since COVID-19). In part, this is driven by the desire to position public transport, through very low fares, at an attractive price point relative to the private car to encourage patronage (see Figure 10).

Figure 10

Fares as a share of operating expenses (2016-21)



Note: CAGR=compound annual growth rate; ACT=Australian Capital Territory
 Source: Productivity Commission

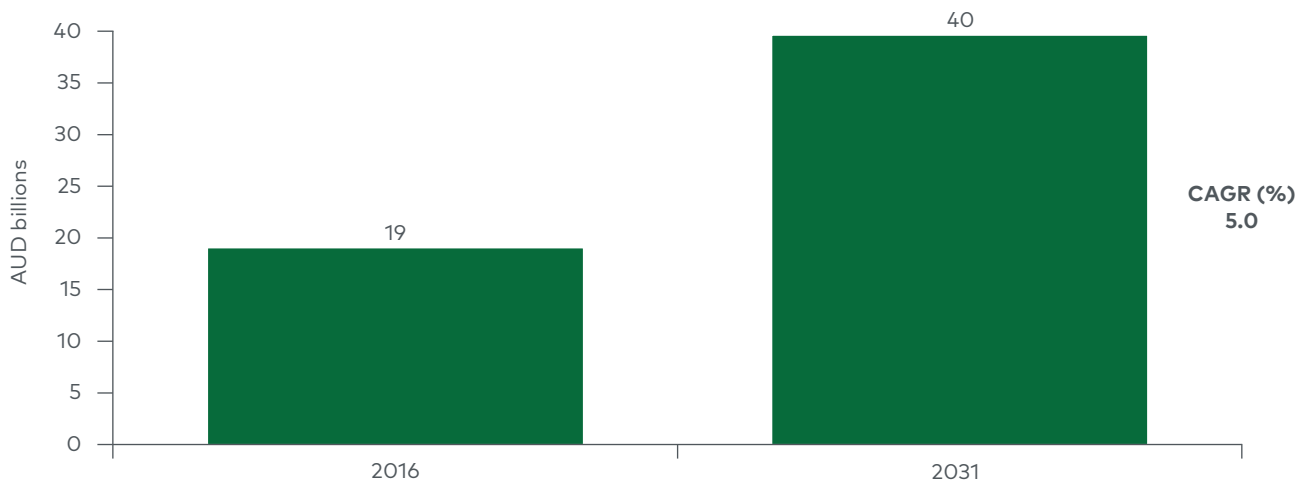
Shifting to a variably priced approach for road use would create a stronger, more consistent pricing regime that allows governments to more effectively incentivise the use of environmentally friendly forms of transport.

Congestion productivity costs

Infrastructure is under operational pressure as congestion is worsening in Australia’s urban centres, impacting the economy (costs of congestion were estimated to be \$19 billion in 2016)¹² and damaging citizens’ quality of life.

Moving forward, this situation will only deteriorate further. Although many scenarios are considered plausible, Infrastructure Australia has forecast that the economic cost of congestion will reach \$40 billion by 2031¹³ (see Figure 11).

Figure 11
Total estimated cost of road congestion and public transport crowding (2016, 2031)



Note: CAGR=compound annual growth rate
Source: Infrastructure Australia, Urban Transport Crowding and Congestion (2019)

Implementing congestion-specific pricing as a standalone mechanism in metro centres is challenging and may be limited in the behavioural outcomes it achieves. A holistic approach to road and congestion pricing across modes on a “mass – time – distance – location” basis would provide a better mechanism to drive the desired behaviour across the entire system. The ability to vary pricing across modes and peak periods will help alleviate behaviours that lead to congestion.

Conclusion

With technological and behavioural shifts already changing the way mobility is consumed in Australia, and increasingly stretching both the operational capacity of existing infrastructure and the funding used to maintain and provide such infrastructure, there is a sense of urgency to enact holistic mobility pricing reform to maintain the relevance, efficacy and equity of transport systems.

From a customer perspective, the future commodity will no longer be private or public transport but rather mobility per se, leveraging current and emerging/future offers including ride pooling and fleet owned and operated vehicles. Inevitably, customers will demand that pricing models be aligned with such a choice set, including (for example) subscription and dynamic pricing. Again, this will have profound implications in terms of its financial, economic and social perspectives.

There is significant scope for “moving the dial” with a clear vision in mind. Key outcomes include securing the funding environment, clarifying pricing signals and maintaining operational efficiency while preserving social equity. These areas do not exist in isolation and should be considered together so that incentives may be aligned and different policies and behaviours can exist in harmony.

It is crucial for policymakers to identify the behaviours and outcomes they are seeking to influence through the pricing of mobility options. Strategies should also be mindful of the linkages between the pricing of public transport and the pricing of private motor vehicle usage. Pricing transport holistically should help consumer mobility decisions to be more readily rationalised and achieve greater efficiency of operation across the entire transport network.

For more information, please contact strategy@lek.com.

Endnotes

¹ BITRE, Australian Infrastructure and Transport Statistics Yearbook (2022)

² Ibid.

³ The Driven (2023); “Australia EV sales by model”

⁴ <https://au.finance.yahoo.com/news/uber-now-more-popular-taxis-031922684.html>

⁵ The Insight Partners, Asia Pacific Ride-Hailing Service Market report (2022)

⁶ L.E.K. 2023 Global Mobility Survey

⁷ Australian Institute of Family Studies, “The relationship between transport and disadvantage in Australia” (2011)

⁸ NSW Parliament (2022)

⁹ Victorian Infrastructure Plan (2021)

¹⁰ Productivity Commission, Public Transport Pricing (2021)

¹¹ Ibid.

¹² Infrastructure Australia, Urban Transport Crowding and Congestion (2019)

¹³ Ibid.

About the Authors



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Mark Streeting is a Partner in L.E.K. Consulting's Sydney office and the practice leader of L.E.K.'s Australian Transport and Travel practice. Mark regularly advises major private and public sector clients across Australia, New Zealand, North America, Europe, the Middle East and Asia on all forms of passenger and freight transport. Mark's fields of expertise include strategy and policy development; demand analysis and forecasting; financial and economic appraisal; regulatory reform and procurement; pricing strategies and development; strategic marketing and communications; and transport innovation, business and operating model transformation, and implementation.



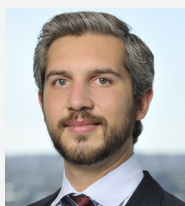
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