

Chapter 2

Toll roads in Australia and elsewhere

Identifying the issues in the discussion

2.1 Some discussion of toll roads is confused because there are a lot of variables, which are not necessarily related, being discussed at the same time.

2.2 Further, from the committee's point of view, it is important to remember that transport is a state responsibility. The Commonwealth's involvement is largely through funding of infrastructure. Its responsibilities for the environment, health and general living standards (through social security and taxation), supervision of corporations and consumer protection also give it specific interests in the issues raised by toll roads.

Roads versus other solutions

2.3 First, there is the question of building roads versus other transport solutions. The objective of building a road is to improve transport and, possibly, the urban environment. In a perfectly logical approach, the transport problem would be examined, and all possible solutions would be compared on the basis of costs and benefits. The costs would include financial costs to government, to businesses and to individual citizens over the life of the solution, and environmental costs in terms of pollution and urban amenity. Similarly, the benefits would be assessed over the life of the asset and would include improvements in convenience and comfort as well as economic benefits.

2.4 Assessing the benefits and costs of transport infrastructure also requires a long time frame. For example, building new motorways frequently results in more car trips, because the new road reduces the cost of a trip, in time and possibly discomfort in the form of driving stress. The traffic from this induced demand puts further stress on other, smaller roads at the beginning and end of the motorway. The road may alter land uses: with good transport access it becomes convenient to establish factories in the outer suburbs. The new road may initially be a more attractive alternative to public transport, which thus becomes less economic with lower patronage. And eventually the volume of traffic on the new road may build to the point where the problem of congestion is as bad as it was at the time of the decision to build it.¹

2.5 For a given transport problem there could be a rail alternative that needs to be compared to a road; or public transport services which reduce congestion and obviate the need for new building. Many arguments against toll roads are in fact arguments against building roads as solutions.

1 For a brief summary of these arguments see C Standen, 'Big road projects don't really save time or boost productivity', *The Conversation*, 24 January 2014, <https://theconversation.com/big-road-projects-dont-really-save-time-or-boost-productivity-21560> (accessed 29 August 2017).

Tolls versus more general road user charges

2.6 Second, the discussion of tolls should be seen in the context of road user charges more generally. The concession holder for a toll road charges tolls on a particular section of the road network because it can, on the basis of a commercial agreement with a government. Fuel excise and vehicle registration charges function to some extent as road user charges. There are arguments for charging for the use of roads more generally, and this is a matter of considerable policy discussion at present. For example:

- The Department of Infrastructure and Regional Development (DIRD) has published a paper, Independent price regulation of heavy vehicle charges, as part of a COAG process on heavy vehicle road reform.²
- DIRD is also participating in cross-jurisdictional investigation of cost reflective pricing for light vehicles.³
- On 24 November 2016 the Prime Minister announced that the Government would 'appoint an eminent Australian to lead extensive community consultation on the costs and benefits of road pricing for all vehicles'. (This process has not begun yet.)⁴

User charges for public services

2.7 It is important to specify the objectives of charging for road use. A road is a part of a transport network which includes other roads as well as train routes and possibly cycle and walk ways. It is a major piece of physical infrastructure which, because of its size and social function, necessarily involves government in its provision. For several centuries it has been assumed in the developed world that providing roads is a core function of government.

2.8 Governments provide many services. Some are free to users: for example, the Australian Broadcasting Commission, most parks, most policing and to a great extent public schools. Some, such as many medical services, require a partial contribution which does not purport to cover the whole cost. Some, especially those which cater to a specific identifiable group, including regulatory services and services where the government is operating in a commercial market, are intended to recover their costs in full.

2.9 User charging may have various rationales. Cost recovery for a very specific service may simply be fair, or an element in the costs of doing business. Sometimes it makes sense to use a service to generate revenue, because funds are always scarce and in particular cases a charge will not cause an appreciable reduction in demand. In

2 Department of Infrastructure and Regional Development (DIRD), *Submission 16*; the paper is at <https://infrastructure.gov.au/roads/heavy/files/IPR-Discussion-Paper.pdf> (accessed 20 July 2017).

3 Department of Infrastructure and Regional Development, *Submission 16*.

4 M Turnbull (Prime Minister), *Ministerial Statement: Infrastructure*, House of Representatives *Hansard*, 24 November 2016, p. 4343.

other cases, the purpose of a charge is precisely to reduce demand, so that people will not over use a service. In economics, a market price in certain circumstances will drive the efficient level of demand for and supply of a good or service.

2.10 On the other hand, a decision not to charge for a service may be due to a perception that the service provides external benefits—benefits over and above what might be captured in a price. For example, it is generally agreed that the benefits to the whole community of a literate population make a case for free public education. Or it may be impossible to exclude people from using a service, such as the ABC, so it does not make sense to charge for it. Or one person's use of a service, such as a park, may have no impact on another person's use, so there is no cost involved. Or the benefits of a service may be so widely spread that in effect all taxpayers are users, so that it can just as effectively be funded from general revenue.

2.11 User charges may be complex where a network is involved. Telephone calls are charged to the maker of the call, but may be of equal benefit to the receiver. This is particularly relevant to a road, which is part of a complex transport network.

2.12 Some of the discussion of toll roads confuses the original rationale—that users of the particular section of road will pay for its construction—with other variables such as commercial returns and congestion management.

Separating the decision to build a road from the method of financing it

2.13 Because a road is a major piece of infrastructure with wide social functions, the construction of which will cause significant disruption, the decision to build a major road is arguably one for government. It would normally be a result of a long term city planning process, and would probably involve consultation with communities affected. The decision to build would arise from the calculation that building a road will result in a net benefit for the community. Questions of how to pay for it would logically follow the decision to build. As discussed later in this report, the community will pay for the road. The question is whether it is to be financed through taxes or tolls or some other method.

2.14 Many features of toll roads in Australia's cities are at least partly the result of decisions to finance the project through private involvement, often in a public-private partnership or PPP. To allow the private operator to recover the cost through tolls is a further, conceptually separate, decision from the decision to use private finance.

Some issues in the financing of infrastructure

Attracting private capital

2.15 Infrastructure Australia distinguishes between funding and financing infrastructure. Financing is the method of raising the money, which is paid back through funding from user charges or taxes—and only from them.⁵ However, the building and operation of infrastructure may be financed in a variety of ways.

5 Infrastructure Australia, *Australian Infrastructure Plan, Priorities and reforms for our nation's future*, February 2016, p. 90 http://infrastructureaustralia.gov.au/policy-publications/publications/files/Australian_Infrastructure_Plan.pdf (accessed 23 August 2017).

2.16 Since the 1980s, governments have become progressively more wary of debt. At the same time there has been (real or imagined) pressure to reduce taxation. Governments have sought ways of financing large projects which do not involve government borrowing, and which get the cost 'off the balance sheet'. The answer to this problem has been to involve private capital in the building of infrastructure.

2.17 There is some evidence that these trends are being reversed. The Commonwealth Treasurer, Mr Scott Morrison, in April 2017 made a distinction between 'good debt' and 'bad debt', and said that government borrowing to create future assets could be acceptable and even desirable.⁶ Meanwhile, the Opposition has made several policy announcements which foreshadow an increase in tax revenue.⁷

2.18 In general, governments can borrow more cheaply than private sector entities. They also do not need to generate returns to shareholders. Given that transport departments are already operating, it is possible that they have lower administration costs. So direct provision by governments could involve lower costs.

2.19 On the other hand, the huge stock of superannuation assets available for investment suggests that attracting private capital to profitable and stable investments could be worthwhile to both government and investors. Public use infrastructure provides many examples of such investments.

2.20 There are several ways that private capital can be involved. Some examples are the sale of infrastructure bonds (to raise a general fund, or to finance specific projects) which then generate a return as interest; build-operate-transfer schemes by which the government takes ownership after the private partner has recouped its capital plus a return; and the sale of a right to raise funds from an asset. From information later in this chapter it is apparent that several major toll road projects began as the second type of scheme, the intention being to build-own-operate, but failed and were taken over essentially as the third type, a toll concession.

2.21 One principle which should guide the decision as to whether the public or the private sector should undertake an activity is that risk should reside with the party best able to manage it. Road provision involves project risks—acquiring the land, getting the road built—and patronage, or traffic, risks. In early discussions of toll roads it was argued that the private sector was best placed to manage these risks. Following failures which were largely due to over-optimistic traffic forecasts, this can no longer be assumed.⁸

6 A McGhee and H Belot, 'Scott Morrison flags budget reporting changes, will allocate expenditure to individual portfolios', ABC News, 27 April 2017, <http://www.abc.net.au/news/2017-04-27/budget-2017-scott-morrison-flags-reporting-changes/8474422> (accessed 1 September 2017).

7 M Farr, 'Taxing the rich isn't the simple solution Bill Shorten is claiming', 12 May 2017, News.com.au website, <http://www.news.com.au/finance/economy/federal-budget/taxing-the-rich-isnt-the-simple-solution-bill-shorten-is-claiming/newsstory/3723269a3764c3441c89f3185ed29a33> (accessed 1 September 2017).

8 Professor David Hensher, *Submission 1*, [p. 2].

2.22 When the private sector finances infrastructure, it allows governments to postpone paying for the asset until it is in use, and to have the people who use the asset pay for its building and its maintenance through tolls. This appearance of a 'user pays' arrangement with no apparent cost to government has been criticised as based on a perception:

...that the government is independent and separate from the residents it's meant to be governing and representing.⁹

2.23 In the past, revenue for road building has been raised through road user charges including vehicle registration and fuel excise. Revenue from fuel excise has been falling consistently over the last decade. This trend can be expected to continue, largely because of better fuel efficiency of vehicles and the increase in alternatively powered vehicles like electric and hybrid vehicles. Even though these funds are not formally hypothecated, such a decline will add pressure for governments to find alternative sources of revenue to finance roads.¹⁰

Tolls to finance roads

2.24 The logic of using tolls to fund road construction is reasonable. The use of the price mechanism can theoretically drive optimal provision and consumption of goods or services. However, this basic economic theory applies to markets where there is no constraint on supply, and where there are alternative products to meet demand. Once either of those two conditions is unmet, the conditions for an optimal price change.

2.25 Sometimes there are constraints on supply, including limited or no alternative routes. In particular, heavy vehicles are often prevented from using suburban streets. Or charging a toll may direct traffic on to suburban streets which are less efficient carriers of the traffic. Once a road has been built, especially a major multi-lane motorway, it is efficient to encourage people to use it. One theoretical paper concludes:

...economically optimal pricing in its purest form leads to major under-recovery of capital and maintenance costs for most of the road system.¹¹

2.26 In many cases toll rates are determined in advance, with an agreed maximum rate of increase. But in fact the benefit to the user of the toll road changes over time:

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- 9 Mr Tony Harris (former New South Wales Auditor-General), interview with Ticky Fullerton for Four Corners, 20 February 2006, <http://www.abc.net.au/4corners/content/2006/s1573798.htm> (accessed 24 August 2017).
- 10 R Dossor, 'Revenue from road use', *Briefing Book for the 45th Parliament*, Parliamentary Library, 2016, http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook45p/FundingRoads (accessed 24 August 2017).
- 11 Department of Infrastructure and Regional Development, *Introduction to Road Economics*, Bureau of Infrastructure, Transport and Regional Economics, Background Paper for an ANZSOG Infrastructure Research Workshop, prepared by Dr Mark Harvey, September 2015, https://bitre.gov.au/publications/2017/files/sp_001.pdf (accessed 28 July 2017).

usually it increases as the volume of traffic in a city, and the congestion on alternative routes, increases.¹²

2.27 Tolls tend not to be simple user charges. First, in several cases, new roads have been funded by extension of the concessions on existing roads. Second, the difference in tolls between roads within a city does not reflect differences in the cost of provision.¹³ It may simply reflect differences in the deal negotiated. Third, the benefit of a road does not accrue only to the person who drives on it. An employer whose work force can use a new road to get to work may benefit from the road even though she never travels on the road, and never pays a toll. Further, when a driver pays to use a toll road, she reduces the congestion on alternative minor roads (conferring a benefit on users of them for which they do not pay). But she may increase congestion on roads beyond the paid-for section, imposing a cost which is also not a component of the toll. A particular tolled road is useful only if there are other roads leading to it. The transport system is a network, not a collection of individual roads.

2.28 Road user charges can be used for broader purposes such as demand management. But such charges have to be applied with the whole network in mind. Submissions from areas dependent for access on toll roads have made this point.¹⁴ Professor David Hensher believes that only the state has any incentive to think in terms of the network. But, he argues, governments, by agreeing to long term tolling contracts, have given away the pricing control that would have allowed them to optimise charging on the network.¹⁵

2.29 The Bureau of Infrastructure, Transport and Regional Economics (BITRE) appears to support this argument, concluding in its *Introduction to Road Economics*:

The main message of this paper is to challenge ideas that economically efficient prices for roads in general are associated with cost recovery, and the roads could be managed efficiently on a commercial basis without a high degree of regulation.¹⁶

2.30 The use of tolls as a method of financing infrastructure is not only a way of postponing the cost to government. Some toll road projects have involved an up-front payment to government for the right to build and operate the road.¹⁷

12 Professor David Hensher, *Submission 1*, [p. 2].

13 Associate Professor Russell Thompson, *Submission 9*, [p. 2].

14 Western Sydney Regional Organisation of Councils, *Submission 2*, p. 3, p. 9; Hobson's Bay City Council, *Submission 29*, p. 4.

15 Professor David Hensher, *Submission 1*, [p. 2].

16 Department of Infrastructure and Regional Development, *Introduction to Road Economics*, Bureau of Infrastructure, Transport and Regional Economics, p. 22.

17 Bain, R. (2012) Twenty-One Limitations & Shortcomings with Traditional 4-Step Models, quoted in Professor David Hensher, *Submission 1*, fn 2.

Toll roads in Australia¹⁸

2.31 There are 16 toll roads in Australia: eight (41 per cent of total toll road length) in New South Wales, two (25 per cent) in Victoria and six (34 per cent) in Queensland. BITRE distinguishes three categories of toll roads: bridges or tunnels crossing barriers, like the Sydney Harbour Bridge and the Go-Between Bridge in Brisbane; roads incorporating tunnels which are intended to ease congestion on the surface, like the Sydney Cross-City Tunnel and the Brisbane Clem7; and intra-city links, some of which, like the Sydney M7, the Logan Motorway in Brisbane, and the Melbourne Eastlink, are over 35 kilometres long. This information is summarised in the table.

2.32 Most toll roads have been developed as public-private partnerships, with mixed success. Failures have generally been due to exaggerated forecasts of traffic volumes: this is often referred to as 'optimism bias'. This has been particularly true for the second type of freeways, those involving tunnels.

2.33 As several companies developing toll roads have failed, there has been an increase in concentration of ownership. Today Transurban operates, and has at least a majority ownership of, 13 of the 16 toll roads.

2.34 Most of the toll roads use fixed tolls. The exceptions are the Sydney Harbour Bridge and the Sydney Harbour Tunnel, which vary by time of day, and the Sydney M7, which has distance-based tolling. (WestConnex, including the new M4 lanes opening now, will also use distance based tolling.¹⁹) Tolls for cars vary from \$2.70 for the 38.7 kilometre Logan Motorway to \$8.70 for the 22 kilometre Melbourne CityLink. Tolls for trucks for those roads are \$7.30 and \$11.60 respectively.²⁰

2.35 Four more major projects are currently proposed or in their early stages: Toowoomba Second Range Crossing, NorthConnex and WestConnex in Sydney, and the Westgate Tunnel project in Melbourne. Three major upgrade projects are proposed in Brisbane.²¹ All of these except the Toowoomba Second Range Crossing are Transurban projects.

18 Material in this section is derived from Department of Infrastructure and Regional Development, *Toll Roads in Australia*, Bureau of Infrastructure, Transport and Regional Economics, September 2016, https://bitre.gov.au/publications/2016/files/is_081.pdf (accessed 20 July 2017), unless otherwise indicated.

19 WestConnex, *Tolls for WestConnex stages*, <https://www.westconnex.com.au/using-westconnex/tolls> (accessed 21 July 2017).

20 The figures are for 31 August 2016.

21 T Moore, 'Trucks drive Brisbane's toll road revenue growth', *Brisbane Times*, 8 August 2017: 'The \$1.14 billion Gateway Upgrade North project will be finished in late 2018. The \$512 million Logan Enhancement project finishes in 2019, while the \$60 million Inner City Bypass extension finishes mid-2018.' <https://www.brisbanetimes.com.au/politics/queensland/trucks-drive-brisbanes-toll-road-revenue-growth-20170808-gxrzlt.html> (accessed 28 August 2017).

Table: Toll Roads in Australia by Type

Type	Name	State	Length (km)	Original owner	Majority Owner	Operator
Harbour/river crossing	1. Sydney Harbour Bridge	NSW	1.1	NSW Dept. of Public Works	RMS	RMS
	2. Sydney Harbour Tunnel	NSW	2.7	Transfield Pty Ltd & Kumagai Gumi	Kumagai Gumi (50%)	Tunnel Holdings Pty Ltd
	3. Go Between Bridge	QLD	0.3	Brisbane City Council	Transurban	Transurban
Tunnels or roads with tunnels	4. Cross City Tunnel	NSW	2.1	CCT Motorways	Transurban	Transurban
	5. Lane Cove Tunnel	NSW	3.8	Connector Motorways	Transurban	Transurban
	6. Clem7	QLD	6.8	RiverCity Motorway	Transurban	Transurban
	7. Airport Link	QLD	6.7	BrisConnections	Transurban	Transurban
	8. Legacy Way	QLD	5.7	Brisbane City Council	Transurban	Transurban
Intra-city links - short - long	9. M1 (Eastern Distributor)	NSW	6.0	Airport Motorway Pty Ltd	Transurban	Transurban
	10. M2 (Hills)	NSW	21.0	Hills Motorway Pty Ltd	Transurban	Transurban
	11. M7 (Westlink)	NSW	40.0	Western Sydney Orbital Pty Ltd	Transurban (50%)	Transurban
	12. M5 (South-West)	NSW	22.0	Interlink Roads Pty Ltd	Transurban (50%)	Transurban
	13. CityLink	VIC	22.0	Transurban	Transurban	Transurban
	14. EastLink	VIC	39.0	ConnectEast	Horizon Roads Pty Ltd	Horizon Roads Pty Ltd
	15. Gateway Motorway	QLD	23.1	Queensland Investment Corp.	Transurban	Transurban
	16. Logan Motorway	QLD	38.7	Logan Motorways Pty Ltd	Transurban	Transurban

Source: Bureau of Infrastructure, Transport and Regional Economics, *Toll Roads in Australia*

2.36 Most tolls are collected electronically. The systems for collection vary among the roads and from state to state. Most involve an electronic sensor linked to an account and carried in the vehicle, but there is also provision for reading of vehicle number plates. There are several providers of tolling, and they have roaming arrangements whereby tolls can be paid by interstate drivers before or after a trip (within 48 hrs before incurring a fine) with one account working for all the freeways in a city.

2.37 However, as discussed in Chapter Four, there are considerable equity issues that impact those who use the roads less regularly, for example interstate visitors. Many operators require interstate drivers to register online, and there are issues regarding adequate disclosure. For example, in the case of Transurban, a \$1.50 application fee is charged plus a 0.75c vehicle matching fee for each tollway accessed on top of the toll charge itself.

2.38 The Australian Competition and Consumer Commission has suggested that, while there is not a competitive market in toll roads, there is a competitive market in tolling service provision.²²

Toll roads in other countries

2.39 In comparing Australia with other countries it is important to remember the interaction of tolls with other road user charges, aside from tolls. These include vehicle registration charges and fuel excise.

United States

2.40 The US has had a long history of toll roads, including an infrastructure boom before World War II financed largely by tolls. However, the 1956 legislation for a national highway system was based on tax funding. More recently, because of a growing infrastructure deficit and a perceived shortage of public funding, there is increasing interest in financing building by tolls, with a large number of federal demonstration and pilot programs.²³ In the 10 years from 2005 to 2015, toll road distances increased by about 18 per cent.²⁴

- In 2005, the state of Indiana sold a 75-year tolling concession on the East–West Toll Road in order to raise funds for further road building. It was bought by a joint venture between Cintra, a Spanish construction firm, and Macquarie Atlas Roads for US\$3.8 billion. This was \$1 billion more than the next bid, and proved to be based on unrealistic traffic forecasts. The impact was borne by the buyers and their financiers.²⁵

Canada

2.41 Canada has not made much use of tolls, although it has relied heavily on PPPs to build roads.²⁶

22 See for example Australian Competition and Consumer Commission, *Transurban consortium - proposed acquisition of BrisConnections including the AirportLinkM7 toll road in Brisbane*, 26 November 2015, <http://registers.accc.gov.au/content/index.phtml/itemId/1191035/fromItemId/751043> and *Transurban Group - considering proposed acquisition of Connector Motorways Group* [former owner of Lane Cove Tunnel and Military Road E-Ramp in Sydney], <http://registers.accc.gov.au/content/index.phtml/itemId/924507/fromItemId/751043> (both accessed 21 July 2017).

23 US Federal Highway Administration, *Toll Facilities in the United States*, 2016, <https://www.fhwa.dot.gov/policyinformation/tollpage/>, History, Current Policy (accessed 28 August 2017).

24 US Federal Highway Administration, *Toll Facilities in the United States*, 2016, <https://www.fhwa.dot.gov/policyinformation/tollpage/>, Toll Mileage Trends (accessed 28 August 2017).

25 R Puentes, 'The Indiana Toll Road: How Did a Good Deal Go Bad?', *Forbes* magazine, 3 October 2014, <https://www.forbes.com/sites/realspin/2014/10/03/the-indiana-toll-road-how-did-a-good-deal-go-bad/#2c7ae80d2087> (accessed 28 August 2017).

26 T Ahmad, *National Funding of Road Infrastructure: Canada*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/canada.php> (accessed 24 August 2017).

England and Wales

2.42 Transport is a devolved responsibility in the United Kingdom so Scotland and Northern Ireland operate separately. There is very limited use of toll roads in England and Wales, although the government has the legislative power to impose tolls on major roads, and has used PPPs for road building. There has been some use of shadow tolls, where the government pays a private operator a fee per vehicle.²⁷

France

2.43 France makes extensive use of tolls: about three-quarters of highways are tolled. However, in 2014 the French government announced the introduction of an Eco-charge on heavy goods vehicles on non-tolled routes and installed gantries for collecting it, only to abandon it in the face of opposition from the transport industry. Tolls are distance based and vary with type of vehicle. In the absence of tolls on minor roads, local governments are beginning to force heavy vehicles onto the (main) tolled routes by regulation.²⁸

Germany

2.44 Germany has not in the past used tolls. Legislation has been passed in the lower house of parliament to impose tolls on autobahn routes from 2019. In effect they will be a tax on foreign users, because German drivers who pay annual registration will have their tolls refunded. There has been strong opposition within the EU to this measure, which has been debated for several years.²⁹

Italy

2.45 Italy has an extensive system of toll roads. In 2009 administration of the national highway system was transferred from regional governments to the federal government. Of the tolls collected, 2.4 per cent is paid to the government and a proportion of this is devoted to road maintenance. Italy has also made use of PPPs, sometimes in conjunction with tax concessions.³⁰

China

2.46 Tolling is fairly widespread, and has enabled rapid expansion of the road network in the last 20 years. Some toll roads are funded by loans to local governments

27 C Feikert-Ahalt, *National Funding of Road Infrastructure: England and Wales*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/englandandwales.php> (accessed 24 August 2017).

28 N Boring, *National Funding of Road Infrastructure: France*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/france.php> (accessed 24 August 2017); About-France.com website, *HGV / truck driving in France*, <https://about-france.com/hgv.htm#charges> (accessed 24 August 2017).

29 DPA/The Local, *What the new 'foreigner toll' on the autobahn will mean for you*, <https://www.thelocal.de/20170324/what-the-new-german-autobahn-toll-will-mean-for-you> (accessed 24 August 2017).

30 D Figueroa, *National Funding of Road Infrastructure: Italy*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/italy.php> (accessed 28 August 2017).

and tolls are directed to repaying the cost of building the road. Some are privately commercially operated. Tolls may be collected for up to 20 years on government roads and up to 25 years (with possible extension to 30 years) on commercial roads. In some cases the right to collect tolls on government roads is assigned to a private operator.³¹

Japan

2.47 The Japanese expressway system consists mostly of toll roads. The system was originally intended to become toll free as soon as the national expressway network was completed and construction debts repaid, partly from tolls. Highways were constructed by statutory highway corporations from the 1950s. However, the corporations accumulated huge debts and were reorganised in the early 2000s, with a government body to hold the existing assets, and six private companies to build new roads—and collect tolls. The private companies pay the government body a lease fee which depends on the volume of traffic, so the risk remains with the government.³²

Spain

2.48 Some regions of Spain use toll roads extensively, and many toll roads are controlled by local authorities. The logic of planning is that it is possible to travel around cities on good alternative routes without using tolled roads, but they are harder to avoid on intercity routes.³³

Overall comparisons

2.49 Transurban's submission estimates that 0.5 per cent (240 kilometres) of Australia's motorways are tolled, compared with 3 per cent of China's and the US's, 13 per cent of Japan's and 18 per cent of Spain's.³⁴

2.50 Tolls vary widely, both within and between countries. Some examples of national average tolls (in US currency) are: Japan, 24 cents per kilometre; France 11–13 cents per kilometre; Italy 7 cents per kilometre.³⁵ Tolls in Spain are about 10.5 cents per kilometre.³⁶

31 L Zhang, *National Funding of Road Infrastructure: China*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/china.php> (accessed 24 August 2017).

32 S Umeda, *National Funding of Road Infrastructure: Japan*, Library of Congress, 2014, <https://www.loc.gov/law/help/infrastructure-funding/japan.php> (accessed 28 August 2017).

33 Rhino Car Hire website, *Spanish Toll Roads - A Guide to Toll Roads in Spain*, <http://www.rhinocarhire.com/Car-Hire-Blog/August-2015/Spanish-Toll-Roads-A-Guide-to-Toll-Roads-in-Spain.aspx> (accessed 28 August 2017).

34 Transurban, *Submission 27*, p. 12.

35 S Umeda, *National Funding of Road Infrastructure: Japan*, Library of Congress, 2014, section IIB Tolls.

36 Derived from Rhino Car Hire website, *Spanish Toll Roads - A Guide to Toll Roads in Spain*, <http://www.rhinocarhire.com/Car-Hire-Blog/August-2015/Spanish-Toll-Roads-A-Guide-to-Toll-Roads-in-Spain.aspx> (accessed 28 August 2017).

