



DRAFT REPORT

Rank and hail taxi services in NSW

Efficient cost estimates

*Prepared for
IPART*

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Executive Summary

Background

The NSW Government has asked IPART to review and make recommendations on maximum fares for rank and hail taxi services from July 2018 for the whole of NSW. This is the first fare review under the new regulatory framework. The focus is on fares for rank and hail services because booked fares will no longer be regulated.

IPART's terms of reference require it to consider a range of matters, including the cost of providing rank and hail taxi services. IPART has therefore engaged the Centre for International Economics (CIE) to estimate the 'efficient costs' of providing rank and hail taxi services in NSW from 1 July 2018. This includes efficient costs:

- for both standard and wheelchair accessible taxis (WATs); and
- in each of the following regions:
 - Sydney
 - other urban areas (Newcastle, Wollongong, Central Coast and Blue Mountains)
 - country areas (the remainder of the state).

The efficient unit costs will be inputs to IPART's taxi cost model and inform IPART's recommendation of maximum fares.

Efficient cost estimates

Given IPART's focus on the efficient costs of providing rank and hail services, the following costs/rents that have previously been included in cost models can be excluded.

- Licence-related rents, as they are not part of the 'efficient cost' of providing the service.
- Although most taxis are likely to do a combination of booked and rank and hail work, costs specifically related to booked trips — specifically, fees for booking services — are not relevant.
- IPART has also not asked the CIE to estimate efficient labour costs.

IPART's draft cost model involves allocating the remaining costs to either:

- distance-based costs (costs per kilometre)
- time based costs (costs per hour)
- trip based costs (costs per trip).

Based on this framework, the efficient costs of providing standard rank and hail taxi services are shown in table 1. Where possible, unit costs have been estimated directly. However, in many cases upfront capital costs and annual operating costs were estimated.

1 Estimated efficient costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
Per kilometre costs (cents per Km)						
Fuel costs	6.35	6.48	6.04	7.80	7.95	6.97
Maintenance costs	5.61	5.61	5.61	8.38	8.38	8.38
CTP insurance	5.00	5.00	3.30	5.00	5.00	3.30
Total	16.96	17.09	14.95	21.18	21.33	18.65
Upfront costs (\$)						
Vehicle ^a	10 875	10 875	10 875	55 202	55 202	55 202
Equipment and installation	2 830	2 830	2 408	2 830	2 830	2 408
Total	13 705	13 705	13 283	58 032	58 032	57 610
Annual costs (\$ per year)						
Comprehensive insurance	3 455	3 455	3 227	2 909	2 909	2 682
Workers' compensation	1 630	1 630	1 077	1 630	1 630	1 077
General liability	209	209	209	209	209	209
Administration costs	4 276	4 276	4 276	4 276	4 276	4 276
Security monitoring	400	400	0	400	400	0
External wash costs	589	589	589	589	589	589
Internal cleaning costs	988	988	988	880	880	880
Total	11 547	11 547	10 367	10 893	10 893	9 713

^a Includes the cost of vehicle conversion and wheelchair lift, where relevant.

Source: CIE estimates.

Estimated efficient unit costs are shown in table 2. Where costs are charged on a fixed basis, efficient unit costs depend on usage patterns. The estimates presented below are based on average usage patterns from the 2014 survey.

2 Estimated efficient unit costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit
Per kilometre costs						
Vehicle and equipment costs	3.32	3.32	3.22	9.29	9.29	9.22
Fuel costs	6.35	6.48	6.04	7.80	7.95	6.97

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit
Maintenance and repairs	5.61	5.61	5.61	8.38	8.38	8.38
CTP insurance	5.00	5.00	3.30	5.00	5.00	3.30
Other insurance (ex CTP insurance)	4.66	4.66	3.98	5.25	5.25	4.39
Administration costs	3.77	3.77	3.77	4.73	4.73	4.73
Total	25.39	25.52	22.69	31.16	31.31	27.77
Per hour costs						
Security monitoring	7.68	7.68	0.00	8.92	8.92	0.00
External wash costs	11.30	11.30	11.30	13.14	13.14	13.14
Total	18.98	18.98	11.30	22.06	22.06	13.14
Per trip costs						
Internal cleaning costs	14.11	14.11	14.11	12.61	12.61	12.61

Source: CIE estimates.

1 Introduction

Background

The NSW taxi industry has undergone significant changes in recent years, including: increased competition through the emergence of ridesharing services; and significant changes to the regulatory framework.

Increased competition

The emergence of ridesharing services was a catalyst for the far-reaching changes to the taxi industry in NSW. Uber's ridesharing service UberX began operating in Sydney in 2014. At that time, ridesharing services were in breach of the *Passenger Transport Act 1990*. Since then, ridesharing services have been legalised (see below) and have expanded into other areas of NSW, including Newcastle, Wollongong and Byron Bay.¹

Regulatory changes

The NSW Government established an independent Point-to-Point Transport Taskforce in July 2015 to examine the future sustainability of taxis, hire cars and other emerging point-to-point transport providers in NSW, including ridesharing services.

The Point to Point Transport Taskforce provided its report to the NSW Government in November 2015. The first major reforms to the industry were put in place on 18 December 2015, including legalising ridesharing (see above).

New legislation, the *Point to Point Transport (Taxis and Hire Vehicles) Act 2016* was passed by the NSW Parliament on 22 June 2016. The associated regulations were published in August 2017, and the new regulatory framework commenced operation on 1 November 2017.

Key regulatory changes include:

- the legalisation of ridesharing
- the removal of maximum fare regulation for booked trips
- the removal of prescriptive vehicle requirements
- the removal of regulatory requirements for driver training
- replacing 'operators' and 'networks' with 'Taxi Service Providers', with new responsibilities.

¹ Uber estimator website, <https://uberestimator.com/country/australia>, accessed 26 October 2017.

IPART's role in regulating taxi fares in NSW

The NSW Government has asked IPART to review and make recommendations on maximum fares for rank and hail taxi services from July 2018 for the whole of NSW. Although IPART has a long history of recommending taxi fares, this is the first fare review under the new regulatory framework. The focus is on fares for rank and hail services because booked fares will no longer be subject to maximum fare regulation.

This report

IPART's terms of reference require it to consider a range of matters, including the cost of providing rank and hail taxi services. IPART has therefore engaged the Centre for International Economics (CIE) to estimate the 'efficient costs' of providing rank and hail taxi services in NSW from 1 July 2018. IPART will have regard to the efficient unit costs in its decision making.

The recommended efficient unit prices are presented in this report, separated into costs for standard taxis and wheelchair accessible taxis (WATs), segregated into the following locations:

- Sydney
- other urban
 - Newcastle-Central Coast
 - Blue Mountains
 - Wollongong-Shellharbour
- country.

2 General approach

Estimating taxi industry costs

Gathering accurate cost data for the taxi industry is challenging for a range of reasons, including: the fragmented nature of the industry; and a wide range of business models (including individual entities covering multiple parts of the supply chain). In the past, IPART has been able to obtain reasonably accurate cost information only from industry-wide surveys.

The most recent comprehensive estimate of the cost of operating taxi services in different parts of NSW was based on the 2014 survey of taxi drivers and operators undertaken for IPART by the CIE (see tables 2.1 and 2.2).

2.1 Standard taxi – revenue/cost estimates from 2014 survey

	Sydney	Other urban	Country
	\$ ex GST	\$ ex GST	\$ ex GST
Driver earnings	58 610	72 175	64 743
Operator earnings	2 389	5 684	11 082
Fuel	14 735	15 959	14 505
Wash/cleaning	2 427	2 455	2 143
Vehicle costs	6 999	7 128	5 495
Maintenance and repairs	6 721	11 574	10 447
Network fees	7 540	8 914	10 834
Insurance	12 918	9 417	6 973
Administrative costs	422	2 475	1 272
Total costs	112 761	135 781	127 494
Rent to licence owner	27 315	15 207	17 386
Total revenue/costs (including licence)	140 076	150 988	144 881

Source: CIE, 2014 survey of taxi drivers and operators: Survey results for areas outside Sydney, Final Report, Prepared for IPART, May 2015, p. 2.

2.2 Wheelchair accessible taxi – revenue/cost estimates from 2014 survey

	Sydney	Other urban	Country
	\$ ex GST	\$ ex GST	\$ ex GST
Driver earnings	54 533	56 925	58 671
Operator earnings	19 515	2 872	17 049
Fuel	17 063	17 478	16 471
Wash/cleaning	3 197	3 099	3 099

	Sydney	Other urban	Country
	\$ ex GST	\$ ex GST	\$ ex GST
Vehicle costs	10 111	10 911	12 104
Maintenance and repairs	6 721	11 574	10 447
Network fees	9 477	8 914	10 834
Insurance	12 918	9 417	6 973
Administrative costs	422	2 475	1 272
Total costs	133 957	123 666	136 920
Rent to licence owner	1 025	1 025	0
Total revenue/costs (including licence)	134 982	124 690	136 920

Source: CIE, 2014 survey of taxi drivers and operators: Survey results for areas outside Sydney, Final Report, Prepared for IPART, May 2015, p. 3.

However, industrywide surveys capture *actual* costs, while IPART is interested in *efficient* costs; in an industry with significant barriers to competition, current practices will not necessarily reflect the most efficient approach. Furthermore, a survey would not capture cost changes arising from regulatory changes.

General approach to estimating efficient costs

In general, the types of costs incurred in providing taxi services have not changed significantly since 2014. However:

- IPART's referral requires it to determine maximum fares for rank and hail services only;
- IPART has asked for advice on efficient costs', rather than actual costs;
- IPART is focusing on unit costs, rather than annual costs; and
- the new regulatory framework only fully commenced on 1 November 2017.

This has important implications for the approach to estimating costs.

What is an efficient industry model for rank and hail taxi services under the new regulatory framework?

The regulatory framework for taxi fares now differentiates between booked trips (which are no longer subject to regulated maximums) and rank and hail trips (which will continue to be subject to regulated maximum fares). This could affect the efficient business model for taxi service providers, which could choose to offer only one or the other type of trip at particular times of the day or week (e.g. offering only booked trips when demand is high and higher booked fares can be charged, but rank and hail fares are constrained by the maximums; or, conversely, offering only rank and hail when localised demand is high enough that rank and hail jobs provide higher occupancy than travelling to booked work), or not to operate as a taxi at all when demand is low.

Some taxis could be operated relatively intensively (similar to current practices), while others might choose to offer rank and hail services for relatively short periods of time

during a week. Under this model, costs that have traditionally been considered fixed (primarily the vehicle and related equipment) effectively become variable as they may be allocated to other uses of the vehicle. Reforms to compulsory third party (CTP) insurance arrangements have also meant that TSPs can choose to pay a premium based on the number of kilometres, rather than a fixed rate. This effectively means that CTP insurance costs are now variable.

However, we note that the taxi industry continues to have potentially high fixed costs that might mitigate against the emergence of this model in the short term. These fixed costs currently include the following.

- Under the new regulatory regime, entry into the taxi industry remains restricted. Although licence values have declined significantly in some areas due to the emergence of ridesharing, leasing a licence remains a significant cost to most TSPs in NSW. While these licence values reflect 'rents' and should not be included in estimates of efficient costs, they nevertheless remain a significant fixed cost (although this could be affected by IPART's recommendation on the number of licences to be released outside of Sydney).
- Unlike vehicles used for ridesharing, the new regulations effectively require taxis to be easily identifiable as taxis, including requirements for roof lights, taxi signs and decals that identify the TSP. This may reduce the practicality/desirability of using a vehicle used as a taxi for private purposes. That said, there does not appear to be a regulatory requirement that these identifiers are permanently affixed to the taxi, raising the possibility of detachable identifiers.
- Reflecting the current model for delivering taxi services, some other costs – such as comprehensive insurance – are currently set on a fixed basis (although suppliers could potentially change this approach in response to other changes in the taxi industry).

If the types of fixed costs outlined above are sufficiently high, there is an incentive to use a specialist vehicle for taxi services and use it quite intensively. The most efficient model for providing rank and hail taxi services under the new regulatory regime could possibly end up looking quite similar to the existing arrangements.

The 'efficient model' for providing rank and hail taxi services has important implications for how some costs — such as those costs that have previously been considered fixed — are estimated.

What is an efficient business model?

Previous cost estimates have been based on the costs incurred by an operator, which had a defined role under the previous regulatory framework. However, operators no longer have a defined role, so there are various business models that could emerge under the new regulatory framework.

Under the new regulatory arrangements, most regulatory responsibilities fall to authorised Taxi Service Providers (TSPs). In general, the entities that were networks under the previous regulatory framework will become authorised TSPs. However, the business model for owning and operating taxis could vary.

- Most ‘operators’ under the previous regulatory framework are likely to become Affiliated Taxi Service Providers by affiliating with an authorised TSP.
- Alternatively, some operators (under the previous regulatory framework) may choose to become an authorised TSP and operate a small number of taxis without being affiliated with a larger TSP (such as those that were networks under the previous regulatory arrangements).
- Some authorised TSPs that were formerly networks could also own and operate their own taxis.

Which model is likely to be most efficient is not clear. Previous cost estimates were based on an operator. While this role is no longer specified in the legislation, our cost estimates are based on the entity that either owns or leases the taxi licence. As outlined above, TSPs encompass both the ‘network’ and ‘operator’ roles that existed previously. A TSP could provide services using anything from a single taxi to thousands of taxis. We estimate costs on a per taxi basis. It is not necessary to explicitly specify which business model is used; however, in some cases, the approach to estimating costs requires some discussion of the various business models used.

Costs included

Given IPART’s focus on the efficient costs of providing rank and hail services, the following costs/rents can be excluded.

- Licence-related rents, as they are not part of the ‘efficient cost’ of providing the service.
- Although most taxis are likely to do a combination of booked and rank and hail work, costs specifically related to booked trips — specifically, fees for booking services — are not relevant.
- IPART has also not asked the CIE to estimate efficient labour costs.

IPART’s draft cost model involves allocating the remaining costs to either:

- distance-based costs (costs per kilometre);
- time based costs (costs per hour); and
- costs per trip.

The allocation of costs to each of these categories is summarised in table 2.3. Some costs clearly vary by distance (mainly fuel and maintenance costs). However, other costs (such as costs that were formerly considered fixed) are more ambiguous. As such, the allocation is somewhat arbitrary.

2.3 Allocation of costs

Distance-based costs	Hour-based costs	Trip-based costs
<ul style="list-style-type: none"> ▪ Vehicle and equipment costs ▪ Fuel-costs ▪ Maintenance and repairs ▪ Insurance ▪ Administration costs 	<ul style="list-style-type: none"> ▪ Security monitoring costs ▪ External wash costs 	<ul style="list-style-type: none"> ▪ Internal cleaning costs

Source: CIE.

Where possible, unit costs were estimated directly. However, in some cases it was unavoidable that costs were estimated on an annual basis and then divided by the relevant annual distance, hours or trips. To reflect the potential for greater variation in usage patterns under the new regulatory framework, we average per unit costs under a range of usage scenarios.

However, where costs are fixed, average unit costs will be lower where the taxi is used more intensively. In the cost summaries, we therefore assume usage patterns implied by the 2014 survey of taxi operators. Average distance, hours and trips based on 2014 survey responses is shown in table 2.4. This is based on the average response for each type of taxi across all operators that responded.

2.4 Estimated annual distance, hours and trips from 2014 survey data

	Standard	WAT
	No.	No.
Estimated distance (Km)	113 534	90 433
Estimated hours (No.)	5 211	4 484
Estimated trips (No.)	7 003	6 977

Source: CIE based on 2014 survey of taxi operators.

3 *Estimating efficient costs*

Summary of efficient cost estimates

IPART requires efficient unit cost estimates (i.e. efficient costs on a per kilometre, per hour or per trips basis). Where possible, unit costs have been estimated directly. However, in some cases this was not possible due to the nature of the costs or the information available to estimate them. Table 3.1 summarises efficient cost estimates, including: unit costs that were estimated directly, upfront capital costs; and operating costs that were estimated on an annual basis.

3.1 Estimated efficient costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
Per kilometre costs (cents per Km)						
Fuel costs	6.35	6.48	6.04	7.80	7.95	6.97
Maintenance costs	5.61	5.61	5.61	8.38	8.38	8.38
CTP insurance	5.00	5.00	3.30	5.00	5.00	3.30
Total	16.96	17.09	14.95	21.18	21.33	18.65
Upfront costs (\$)						
Vehicle ^a	10 875	10 875	10 875	55 202	55 202	55 202
Equipment and installation	2 830	2 830	2 408	2 830	2 830	2 408
Total	13 705	13 705	13 283	58 032	58 032	57 610
Annual costs (\$ per year)						
Comprehensive insurance	3 455	3 455	3 227	2 909	2 909	2 682
Workers' compensation	1 630	1 630	1 077	1 630	1 630	1 077
General liability	209	209	209	209	209	209
Administration costs	4 276	4 276	4 276	4 276	4 276	4 276
Security monitoring	400	400	0	400	400	0
External wash costs	589	589	589	589	589	589
Internal cleaning costs	988	988	988	988	988	988
Total	11 547	11 547	10 367	10 893	10 893	9 718

^a Includes the cost of vehicle conversion and wheelchair lift, where relevant.

Source: CIE estimates.

These costs are converted to the relevant unit costs in chapter 4.

Estimation of efficient costs

Details of the approach to estimating each cost item are provided below.

Efficient vehicle-related costs

There are various costs that are directly related to the choice of vehicle, including:

- the cost of the vehicle itself — this will vary depending on the make and model of the vehicle, as well as the age at purchase;
- fuel costs — this will depend on the fuel efficiency of the vehicle; and
- maintenance costs — this could also vary across vehicles.

One way to define the ‘efficient vehicle’ is the one that minimises these costs over time. Prescriptive requirements on the type and age of vehicles have been removed,² resulting in a wider range of vehicles that can potentially be used to provide taxi services. That said, not every vehicle is suitable for use as a taxi. For example, the vehicles used as taxis tend to be larger to provide a reasonable level of comfort for larger passengers, particularly when there are multiple passengers and the back seat(s) are used. We have therefore narrowed the sample of vehicles to those that are typically used to provide rank and hail taxi services as these are demonstrably suitable for use as a taxi (table 3.2). The sample includes each of the 2011-2016 model of each of the above vehicles.

3.2 Sample of vehicles

Standard taxi	WAT
Ford Falcon (LPG and petrol models)	Toyota Tarago
Holden Commodore	VW Caddy Maxi (Diesel and petrol models)
Toyota Camry	Kia Carnival (Diesel and petrol models)
Toyota Camry Hybrid	Toyota Hiace Commuter (Diesel and petrol models)
Toyota Prius	

Source: CIE.

To identify the most ‘efficient vehicle’ and age at purchase, we estimate the above costs in annualised terms for each of the vehicles. The most efficient vehicle is the one that minimises costs.

- Vehicle costs are assumed to be amortised over its working life — this calculation is based on the following inputs.
 - The purchase price is based on quotes for private sales from the ‘Red book’ vehicle valuation website. Fit-out costs were also included based on industry quotes obtained in November 2017.

² Except that the vehicle must have 4 doors - excluding wheel chair accessible taxis.

- The vehicle life is estimated based on the maximum kilometres for taxis (inferred from the 2014 survey³ — see table 3.3) **less** the number of kilometres at purchase, divided by the number of kilometres per year.
- The real interest rate is based the average small business lending rate quoted by the RBA (currently around 7.3 per cent), **less** the expected inflation rate (assumed to be 2.5 per cent — the midpoint of the RBA target range).
- Annual fuel costs are estimated based on the estimated fuel efficiency multiplied by the number of kilometres driven over the year. Although this could vary across taxis (particularly under the new regulatory framework), for the purposes of this exercise, we use the average distance implied by the 2014 survey.
- Maintenance costs are estimated based on per kilometre maintenance cost estimates published by the motoring organisations RACV and NRMA, multiplied by the number of kilometres per year.

As outlined above, the maximum number of kilometres for each taxi is inferred from the 2014 survey of taxi operators (using responses from all areas).

- Operators were asked the average age of their vehicles at purchase and the expected life of the vehicle as a taxi.
- The average annual distance each vehicle travels as a taxi was based on average survey responses.
- We assume that on average each vehicle travels around 20 000 Km per year in private use. Although this is higher than the average distance travelled by passenger vehicles in NSW as estimated by the ABS (around 12 300 Kms)⁴, it is consistent with the average number of kilometres published by Redbook on which the vehicle valuations are based on (presumably vehicles with fewer kilometres would have a higher resale value).

From this information we can infer the total distance each vehicle used as a taxi travels over its life (table 3.3).

3.3 Estimated maximum life of vehicles

	Standard taxi	WAT
Average age at purchase (years)	2.15	2.53
Average life (years)	4.76	8.58
Private vehicle average distance (Km /year)	20 000	20 000
Taxi average distance (Km)	113 534	90 433
Implied total distance (Km)	583 907	826 801

Note: With restrictions on the vehicle age removed, some vehicles could potentially have a longer working life than in 2014.

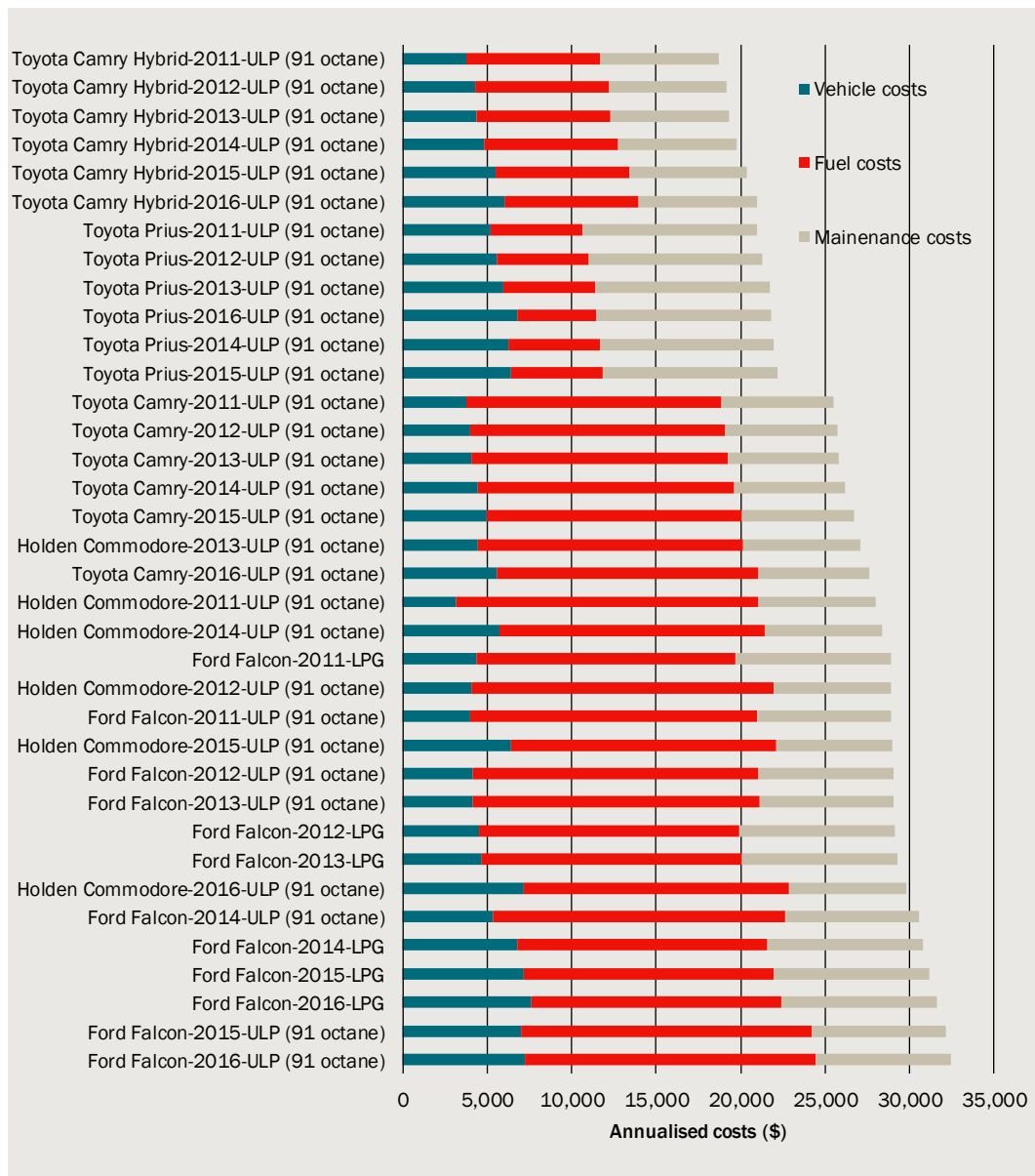
Source: CIE based on 2014 Survey of taxi operators.

³ Note that with restrictions on the vehicle age removed, some vehicles may have a longer life than inferred by the 2014 survey.

⁴ Australian Bureau of Statistics, Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2016, Catalogue No. 9208.0, Table 4.

Based on this approach, the ranking of vehicles for a standard taxi (across different models, age and fuel type) is shown in chart 3.4. This suggests that the most efficient vehicle is a 2011 Toyota Camry Hybrid. This is consistent with data provided by RMS showing that Toyota Camry Hybrids are the most common vehicle currently used as taxis in NSW. That said, a vehicle that is already six years old when purchased and converted into a taxi is somewhat older than is typically the case (e.g. the 2014 survey suggested that taxis are typically 2-3 years old when purchased).

3.4 Ranking of vehicles – standard taxi



Note: Assumes 113 534 Km per year based on the average from the 2014 Survey of taxi operators.

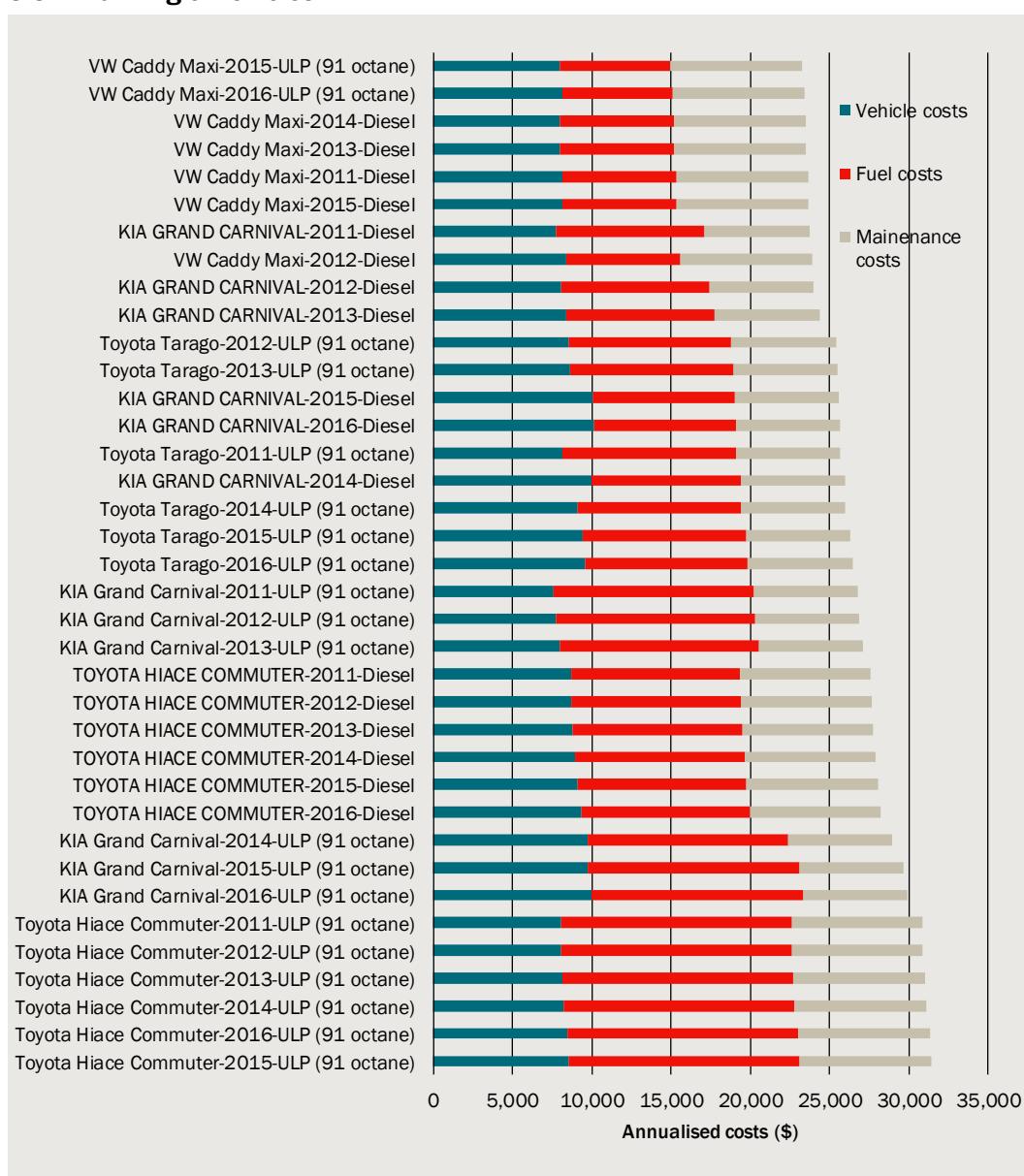
Data source: CIE estimates.

Under the approach used to identify the most efficient vehicle, older vehicles are assumed to have more kilometres ‘on the clock’ and therefore have a lower purchase price (based on ‘Red book’ estimates). On the other hand, older vehicles will also have a shorter life as

a taxi. The modelling suggests that the lower purchase price of the 2011 model slightly outweighs the shorter expected life as a taxi, relative to newer models. However, the modelling does not take into account the potential for higher maintenance costs and declining fuel efficiency as the vehicle ages. These factors could skew the analysis towards a newer model. Nevertheless, the difference in cost between the 2011 Toyota Camry Hybrid and new models is minimal (in the order of several hundred dollars per year).

Using the same approach, the most efficient vehicle for a WAT is found to be a 2015 VW Caddy Maxi (chart 3.5).

3.5 Ranking of vehicles – WAT



Note: Assumes 90 433 Km per year based on the average from the 2014 Survey of taxi operators.

Data source: CIE estimates.

The approach used to identify the efficient vehicle implicitly assumes that all vehicles have the same maximum life, whereas in practice the longevity may vary across vehicles. The most efficient vehicle could also potentially vary depending on usage patterns. However, our estimates suggest that the most efficient vehicle is relatively insensitive to varying average distance driven annually.

Vehicle costs

There are multiple ways to treat vehicle costs. In many cases, the operator will lease the vehicle, implying it could be treated as an operating cost.

Alternatively, the vehicle may be purchased and treated as a capital cost. The most common way for regulators to treat capital costs is to:

- depreciate the asset over time
- allow the asset owner to receive an ‘efficient’ return on capital depending on the level of risk.

In the context of the taxi industry, where the only capital asset is a relatively short-lived vehicle (including the cost of the fit-out), one issue with treating capital costs in this way is that the return on assets will vary significantly over time, depending on how depreciated the vehicle is.

An alternative approach is to amortise the capital costs over the working life, using a real discount rate. This produces a smoother cost profile over time.

The efficient vehicles identified above were used as the basis to determine the upfront costs (table 3.6). Cost estimates were based on vehicle valuation websites⁵ and industry quotes obtained in November 2017 for fit-outs and equipment. Vehicle costs were assumed to be the same across NSW. Fit-out costs vary as additional safety equipment is required in Sydney and other urban areas, but is not mandatory in country areas.

New specifications for meters are being phased in to allow a wider range of technologies and equipment to be used when calculating fares. All taxis that do rank and hail work must upgrade their meters before 1 November 2018 when the new requirements come into effect. In the meantime, all taxis must still have a device that complies with the specifications set out in the Passenger Transport Regulation 2007.⁶

⁵ Redbook website, <http://www.redbook.com>, accessed 10 November 2017.

⁶ Point to point Transport Commissioner website, <https://www.pointtopoint.nsw.gov.au/safety-standards-taxis>, accessed 27 November 2017.

3.6 Estimated upfront cost of vehicle and equipment

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	\$	\$	\$	\$	\$	\$
Vehicle						
Vehicle cost	10 875	10 875	10 875	22 825	22 825	22 825
Vehicle conversion (including lift)	0	0	0	32 377	32 377	32 377
Total vehicle	10 875	10 875	10 875	55 202	55 202	55 202
Equipment and installation						
Meter, light, decal & livery (including installation)	1 182	1 182	1 182	1 182	1 182	1 182
Internal signage	182	182	182	182	182	182
Security camera	1 045	1 045	1 045	1 045	1 045	1 045
Vehicle tracking and duress alarm ^a	422	422	0	422	422	0
Total equipment and installation	2 830	2 830	2 408	2 830	2 830	2 408
Total	13 705	13 705	13 283	58 032	58 032	57 610

^a As vehicle tracking and duress alarm is not required in country areas, these costs have not been included.

Source: Redbook website, <http://www.redbook.com.au>, accessed 10 November 2017; Industry quotes from November 2017.

Fuel costs

Fuel costs are based on the distance travelled (i.e. are explicitly a per kilometre cost), as well as the type and price of fuel. Table 3.7 shows the estimated fuel costs.

- Vehicle fuel efficiency estimates sourced from the Green Vehicle Guide.⁷ Using these estimates implicitly assumes that taxis doing rank and hail work have the same fuel efficiency as a similar vehicle in private use, although some taxis potentially use more fuel than an equivalent vehicle in private use because they spend more time idling, such as when waiting at a rank. Nevertheless, the Green Vehicle Guide distinguishes between fuel efficiency in urban and extra-urban (highway) environments.
 - Our fuel cost estimates for Sydney and Other Urban areas are based on the urban fuel efficiency estimates.
 - For country areas, a combined (urban and extra-urban) fuel efficiency estimate has been used for the country area to account for lower congestion and less ‘stop-start’ driving in country areas compared to Sydney and Other urban areas.

⁷ Green Vehicle Guide website, <http://www.greenvehicleguide.gov.au/Vehicle/Search>, accessed 2 November 2017.

- The ‘efficient vehicles’ identified above all use unleaded petrol (ULP). ULP prices were sourced from the ACCC September Quarterly report on the Australian petroleum industry.⁸
 - The average price for Sydney is used for the Sydney region.
 - The (unweighted) average price for Newcastle, the Central Coast and Wollongong is used for the Other Urban region.
 - The (unweighted) average price across 62 country towns across NSW (such as Albury, Wagga Wagga, Deniliquin and Broken Hill) is used for the Country region.

3.7 Estimated fuel costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
Fuel efficiency (litres per 100 Km)	5.7 ^a	5.7 ^a	5.2 ^b	7.0 ^a	7.0 ^a	6.0 ^b
Fuel price ex. GST (\$/litre)	1.11	1.14	1.16	1.11	1.14	1.17
Fuel cost per Km (cents per Km)	6.4	6.5	6.0	7.8	8.0	7.0

^a Urban estimate using 91 octane petrol, ^b combined urban / highway estimate using 91 octane petrol.

Note: Totals may not sum due to rounding.

Source: Green vehicle guide website, ACCC (2017), Quarterly report on the Australian petroleum industry—September 2017, p. 51, <https://www.accc.gov.au/system/files/Report%20on%20the%20Australian%20petroleum%20market%E2%80%94September%20quarter%202017.pdf>, accessed 23 November 2017.

Maintenance and repairs

The Point to Point Transport Commissioner advises that vehicles used as taxis must be maintained in line with the manufacturer’s recommendations. All maintenance and repairs (excluding minor repairs) must be performed by a licensed mechanic.⁹

Table 3.8 shows the estimated maintenance costs. These values are based on the reported private vehicle expenses published by the motoring organisations RACV and NRMA.¹⁰ Maintenance costs include servicing according to the manufacturer’s schedule plus repairs and spare parts. Service intervals for both vehicles is 15 000 km and includes the cost of tyres. Tyre replacement costs include the cost of five tyres (one set of four tyres changed due to reaching their useful life and one tyre replaced due to unreparable puncture).

⁸ ACCC (2017), Quarterly report on the Australian petroleum industry—September 2017, p. 51, <https://www.accc.gov.au/system/files/Report%20on%20the%20Australian%20petroleum%20market%E2%80%94September%20quarter%202017.pdf>, accessed 23 November 2017.

⁹ Point to Point Transport Commissioner (2017), *Safety standards for taxis*, <https://www.pointtopoint.nsw.gov.au/safety-standards-taxis>, accessed 23 November 2017

¹⁰ Sourced from www.carservice.com.au/car-service-cost, accessed 8 November 2017

3.8 Maintenance costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cent per Km	cent per Km	cent per Km	cent per Km	cent per Km	cent per Km
Maintenance costs (including GST)	6.17	6.17	6.17	9.22	9.22	9.22
Maintenance costs (excluding GST)	5.61	5.61	5.61	8.38	8.38	8.38

Source: RACV (2017), *Private Vehicle Expenses 2017*, p. 14, <https://www.racv.com.au/cars-and-driving/cars/owning-and-maintaining-a-car/car-running-costs>, accessed 15 November 2017, NRMA Motoring and Services (2013), *Private Whole of Life Fixed Vehicle Operating Costs*, p.56, http://www.radschool.org.au/magazines/Vol47/pdf/Private_Costs_Report_Summary.pdf, accessed 15 November 2017.

Insurance

All taxis that operate in NSW are required to have compulsory third party (CTP) insurance. From 1 December 2017, a new CTP Green Slip Scheme will commence.

Under the new arrangements, operators will have two choices for calculating premiums:

- Per kilometre calculation method — under this method, operators will be required to pay in instalments and lodge odometer readings for the vehicle every 4 months (for T plates) or every 6 months (for TC plates). According to the State Insurance Regulatory Authority (SIRA), the premiums are expected to be based on:
 - a rate of 5 cents per kilometre for T plates; and
 - a rate of 3.3 cents per kilometre for TC plates.¹¹
- Fixed premium calculation method — under this method, operators will pay a fixed annual premium.

Our efficient cost estimates are based on the per kilometre calculation method.

Taxis must also be covered by a valid insurance policy for third party property damage with cover of at least \$5 million, although for many taxis this is included within comprehensive insurance (although this is not compulsory). Other types of insurance — including workers' compensation and general liability insurance — are not compulsory for taxis. This raises the question of whether non-compulsory insurances should be included in 'efficient cost' estimates.

As with most insurances, the expected benefit (under risk neutrality) is unlikely to outweigh the cost of the premium for the average policyholder. Nevertheless, insurance is a well-accepted approach to managing risk across most businesses. We therefore consider it appropriate to include non-compulsory insurances in efficient costs.

Reflecting current industry practice where taxis are typically driven relatively intensively, comprehensive and other insurance premiums are set on a fixed basis, rather than a per kilometre basis. Estimated annual premiums based on industry quotes obtained in November 2017 are shown in table 3.9.

¹¹ NSW Government, *The new CTP Green Slip scheme: Factsheet for taxis*, p. 1.

3.9 Estimated annual insurance premiums

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	\$	\$	\$	\$	\$	\$
Comprehensive	3 800	3 800	3 550	3 200	3 200	2 950
Workers' compensation	1 793	1 793	1 185	1 793	1 793	1 185
General liability	230	230	230	230	230	230
Total (including GST)	5 823	5 823	4 965	5 223	5 223	4 365
Total (ex GST)	5 294	5 294	4 514	4 748	4 748	3 968

Source: Industry quotes obtained in November 2017.

In general, comprehensive insurance premiums are higher for taxis than regular vehicles, presumably reflecting a higher probability of an accident due to higher usage. It is therefore likely that comprehensive insurance premiums offered to casual taxi operators would be based on the kilometres driven as a taxi. Similarly, other insurance premiums are likely to be based on the number of kilometres driven. On this basis, it is reasonable to estimate the insurance costs (other than CTP) on a per kilometre basis by dividing the estimated annual cost by the number of kilometres driven annually.

Security monitoring

Until relatively recently, it was mandatory for taxis operating in NSW to be affiliated with an accredited network. The services provided by networks included:

- booking services
- security monitoring
- other network services, such as lost property.

Under the new regulatory framework, most regulatory responsibilities fall to authorised Taxi Service Providers (TSPs). Regulatory responsibilities include:

- ensuring drivers are eligible
- developing Safety Management Systems
- monitoring duress alarms (in Sydney, Newcastle, Wollongong and the Central Coast)
- paying the new levy
- paying accreditation fees.

The cost of the tasks associated with these regulatory responsibilities will be reflected in the fees that TSPs charge to affiliates. However, based on our investigations it is not clear that TSPs that were formerly networks currently offer a service that excludes booking services. As discussed above, fees for booking services are not relevant to rank and hail services and are therefore should be excluded from efficient cost estimates.

An operator that chooses to focus exclusively on rank and hail work would therefore need to become an authorised TSP. Note that it is more likely that this would be a viable business model in Sydney where previous survey evidence suggests that rank and hail trips are a higher proportion of total trips.

One possible barrier for operators in Sydney, Newcastle, Wollongong and the Central Coast to become authorised TSPs is the requirement for duress alarms and vehicle tracking. To comply with the safety requirements under the new regulatory framework, an authorised TSP would presumably need to demonstrate that systems are in place to ensure that the duress alarm is monitored at all times, so that there is a suitable response in the event that the alarm is triggered. This requirement could potentially be relatively onerous for small-scale authorised TSPs, particularly where the authorised TSP also drives the vehicle (i.e. the TSP cannot be monitoring the duress alarm while driving).

A small-scale authorised TSP is therefore likely to need to outsource these services. Various companies offer vehicle monitoring services — including duress alarm monitoring and vehicle tracking — for other industries. This would generally involve:

- purchasing the GPS tracking (and duress alarm) hardware (these costs have been included with the vehicle equipment costs above); and
- ongoing fees for vehicle tracking and alarm monitoring services.

The cost of the vehicle tracking and duress alarm monitoring services can vary depending on the sophistication of the services provided and other factors. Quotes for various companies suggests the cost of these services is in the order of \$300-500 (excluding GST) per year (these services are generally charged on a weekly or monthly basis). This includes duress alarm monitoring 24/7 by an approved security company, with an escalation process going to the police department.

It is not clear whether these specific services are currently offered to the taxi industry or whether they would meet the taxi industry's specific requirements, although these services could presumably be tailored to the taxi industry's needs. This indicates that a small-scale authorised TSP wishing to exclusively focus on the rank and hail market could potentially fulfil the safety requirements under the new regulatory framework at a significantly lower cost than the bundled services currently offered by networks (now TSPs).

Administrative costs

The costs of the administrative tasks associated with fulfilling the regulatory responsibilities of a TSP would presumably be reflected in the affiliation fees. However, these tasks would need to be performed by a small-scale authorised TSP' (i.e. a former operator that chooses not to become affiliated with a TSP that was previously a network). Furthermore, the main tasks previously performed by operators (including: scheduling drivers; arranging for vehicle servicing; arranging insurance, paying bills, tax returns etc.) will still be undertaken, whether it be by a TSP or an Affiliated TSP. These costs are unlikely to change significantly under the new regulatory framework.

Estimating the 'efficient costs' of performing these tasks is challenging. In the 2014 survey, operators were asked to provide estimates of:

- their own time spent on administration (on a weekly basis);
- average annual cost of staff time spent on administration; and
- any other costs incurred in performing the tasks required of an operator.

This survey information is the only source of information available on the administrative costs associated with operating a taxi. To estimate efficient administrative costs, we value a small-scale authorised TSP's (previously an operator) own time based on an appropriate Award wage rate. This is similar to the approach used by IPART prior to the 2011 survey.

As the administrative tasks are mainly clerical in nature, we base the value of an small-scale TSP's time on the *Clerks — Private Sector Award 2010*. Weekly wages across levels are specified in the Award (table 3.10). Hourly wages are calculated by dividing by 38 hours per week (specified in the Award) and adding the 25 per cent loading for casual workers (also specified in the Award).

The relevant tasks associated with operating a taxi most closely aligns with the characteristics and typical duties/skills outlined in the Award at Level 5.

3.10 Relevant Award wage rates

	Weekly wage rates ^a	Hourly (casual) ^b
	\$	\$
Level 3	854.60	28.11
Level 4	897.40	29.52
Level 5	933.80	30.72

^a Specified in the *Clerks — Private Sector Award 2010*, p. 14. ^b Based on a 38 hour week plus the 25 per cent loading for casual employees to account for leave and other entitlements casual employees are not entitled to.

Note:

Source: *Clerks — Private Sector Award 2010*.

Information from the survey is based on actual costs, rather than efficient costs. Rather than using an average (or median) cost across operators, we propose to base the efficient cost estimate on an operator that is more efficient than average.

One interpretation of 'efficient costs' would be based on the costs incurred by the most efficient operator. However, it may be unreasonable to expect the whole industry to achieve the same level of efficiency as the lowest cost operator. Furthermore, there is a risk that the apparently most efficient operator made some sort of error when responding to the question. We therefore base the efficient cost estimate on the 25th percentile (table 3.11). While somewhat arbitrary, this is a level of efficiency that is somewhat more efficient than the industry average, but should be achievable across the industry.

3.11 Administrative costs by percentile

Percentile	Annual cost
	\$
5 th	1 536
10 th	2 125
15 th	2 919
20 th	3 215
25 th	3 526

Percentile	Annual cost
	\$
30 th	4 044
35 th	4 608
40 th	5 126
45 th	5 979
50 th	6 507

Source: CIE based on 2014 Survey of taxi operators.

A small-scale authorised TSP would also have some additional responsibilities under the new regulatory framework, compared to an operator's responsibilities under the former regulatory framework.

- As drivers will no longer be accredited by the Roads and Maritime Service (RMS), TSPs will have responsibility for checking each driver's credentials to ensure they are eligible to drive a taxi. This requirement would presumably be more onerous for a TSP than checking that the driver had an accreditation under the previous regulatory framework. Where a bailee driver drives for multiple TSPs, these costs may be incurred multiple times (by each TSP, rather than once by RMS), leading to the possibility that overall administrative costs will be higher under the new regulatory framework. That said, small-scale authorised TSPs are likely to have a small number of regular bailee drivers (and may drive themselves), suggesting that this may be a one-off or irregular cost when a new driver commences. Furthermore, our investigations suggest that the Taxi Council may provide these services (although it is unclear how that model would be funded).
- TSPs must also develop a Safety Management System identifying relevant risks and how those risks will be addressed. For small TSPs this would presumably be a one-off transitional cost, although the Safety Management System may need to be updated periodically.
- Authorised TSPs must pay an annual authorisation fee. The authorisation fee varies depending on the number of passenger trips (see table 3.12).¹² Based on the 2014 survey results, most taxis were providing 5000 to 10 000 trips per year. This implies that an authorised TSP operating a single vehicle the authorisation fee is likely to be \$500 per year. For an authorised TSP operating multiple vehicles, the annual fee per vehicle is likely to be lower.
- TSPs are responsible for keeping records of all trips for at least 2 years. This information would presumably be available from a meter, so this requirement is unlikely to significantly increase costs.
- TSPs are also responsible for paying the new Passenger Service Levy. As this is based on the number of trips it presumably be relatively straightforward to calculate and is unlikely to be administratively onerous.
- Authorised TSPs are also responsible for setting fares for booked services. However, the focus here is on rank and hail services only.

¹² Point to Point Transport Commissioner website, https://www.pointtopoint.nsw.gov.au/how-become-authorized#Authorisation_fees, accessed 10 November 2017.

3.12 Annual authorisation fees

	Annual authorisation fee
	\$
0 – 19 999	500
20 000 – 49 999	750
50 000 – 99 999	1 250
100 000 – 499 999	2 500
500 000 – 999 999	5 000
1 000 000 – 2 499 999	8 500
2 500 000 – 4 999 999	15 000
5 000 000 – 9 999 999	25 000
More than 10 000 000	50 000

Source: Point to point Transport Commissioner website, https://www.pointtopoint.nsw.gov.au/apply-authorization#Authorisation_fees, accessed 16 November 2017.

On this basis, it may be reasonable to add an additional \$750 (which is mostly authorisation fees) to the costs estimated above, suggesting costs for a small TSP would be around \$4275 per year.

Cleaning costs

The estimated cost of each internal clean and external wash is shown in table 3.13. These estimates are based on the following inputs.

- Industry quotes suggest:
 - the cost of a coin-operated vacuum cleaner are generally in a range between 50 cents and \$1 per minute, excluding GST; and
 - an exterior machine wash costs around \$10, excluding GST.
- Cleaning would generally be completed by the driver. It is therefore important to include the cost of the driver's time, as well as other cleaning-related costs.
 - We assume:
 - ... an external wash takes around 6 minutes; and
 - ... an internal vacuum takes around 4 minutes (based on 1 minute for each side in both the front and backseats).
 - The opportunity cost of the driver's time is valued at \$13.27 per hour (or \$0.22 per minute). This is based on estimated driver earnings from the 2014 survey (averaged across shifts) inflated using the ABS's Wage Price Index.

3.13 Estimated cleaning costs

	Driver's time	Cost of driver's time ^a	Other costs	Total
	Minutes	\$ (ex GST)	\$ (ex GST)	\$ (ex GST)
Internal clean	4	0.89	3.00	3.89
External wash	6	1.33	10.00	11.33

^a Valued at \$13.27 per hour (or \$0.22 per minute) based on the average driver earnings from the 2014 survey (averaged across shifts) and inflated using the ABS's Wage Price Index.

Source: Industry quotes from November 2017; 2014 Survey of taxi drivers; CIE estimates.

The frequency with which an 'efficient taxi' is cleaned is not clear. However, it will be related to how much the taxi is used. A taxi may need a basic internal vacuum after every second shift. However, an external wash may be needed less frequently. We assume that a relatively intensively operated taxi may need an external wash once per week. Based on these assumptions and the average number of shifts from the 2014 survey, annual 'efficient cleaning costs' are shown in table 3.14.

3.14 Estimated annual wash/cleaning costs

	Internal clean	External wash	Annual cost
	No.	No.	\$
Standard taxi	254 ^a	52 ^b	1 577
WAT	227 ^a	52 ^b	1 469

^a The cost of an internal clean is estimated at \$3.89 (see table 3.14 above). ^b The cost of an external clean is estimated at \$11.33 (see table 3.14 above).

Source: CIE estimates based on industry quotes from December 2017.

4 Estimating efficient unit costs

Summary of efficient unit costs

The efficient units costs of providing rank and hail taxi services in standard taxis and WATs across different areas of NSW are shown in table 4.1.

4.1 Estimated efficient unit costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit
Per kilometre costs						
Vehicle and equipment costs	3.32	3.32	3.22	9.29	9.29	9.22
Fuel costs	6.35	6.48	6.04	7.80	7.95	6.97
Maintenance and repairs	5.61	5.61	5.61	8.38	8.38	8.38
CTP insurance	5.00	5.00	3.30	5.00	5.00	3.30
Other insurance (ex CTP insurance)	4.66	4.66	3.98	5.25	5.25	4.39
Administration costs	3.77	3.77	3.77	4.73	4.73	4.73
Total	25.39	25.52	22.69	31.16	31.31	27.77
Per hour costs						
Security monitoring	7.68	7.68	0.00	8.92	8.92	0.00
External wash costs	11.30	11.30	11.30	13.14	13.14	13.14
Total	18.98	18.98	11.30	22.06	22.06	13.14
Per trip costs						
Internal cleaning costs	14.11	14.11	14.11	12.61	12.61	12.61

Source: CIE estimates.

Estimating efficient unit costs

As discussed previously, IPART is specifically interested in unit costs (i.e. costs on a per hour, per kilometre or per trip basis). Where possible, unit costs were estimated directly. In particular, unit costs were estimated directly for:

- fuel
- maintenance; and

- CTP insurance.

Other costs were estimated on a fixed basis, due to the nature of the costs themselves, where costs are generally charged on a fixed basis or due to the nature of the information available to estimate efficient costs.

In some cases, these costs could reasonably be allocated to either: time-based costs, distance-based costs or trip-based costs. Furthermore, the average per unit cost will depend on usage patterns.

Reflecting the fact that the number of hours each taxi is on the road and the distance travelled and therefore the number of trips per taxi could vary to a greater extent under the new regulatory framework, we estimate unit costs under a range of scenarios. The specific distance scenarios include:

- a low scenario (50 000 Kms per year);
- a medium scenario (80 000 Kms per year); and
- a high scenario based on the average implied by the 2014 survey (see table 2.4 above).

The scenarios for time and trip-based costs, distances from the 2014 survey were reduced commensurately (see table 4.2).

4.2 Scenarios used to estimate unit costs

	Standard			WAT		
	Distance	Hours	Trips	Distance	Hours	Trips
	Km	No.	No.	Km	No.	No.
Low	50 000	2 295	3 084	50 000	2 479	3 857
Medium	80 000	3 672	4 935	80 000	3 966	6 172
High (based on 2014 survey)	113 534	5 211	7 003	90 433	4 484	6 977

Source: CIE 2014 Survey of taxi operators and CIE analysis.

Vehicle and equipment

Under the new point to point regulation, vehicles used to provide taxi services could potentially have alternative uses. Where the vehicle is used as both a private vehicle and a taxi, one approach would be to assume that the owner would own the vehicle anyway. Under this approach, the operator is essentially hiring the vehicle from the private owner (presumably the operator him or herself), implying a time-based cost. However, this approach is more appropriate to the rideshare model. As discussed above, it is not necessarily clear that this model is applicable to taxis.

Alternatively, where rank and hail taxi services are provided using a vehicle used exclusively for taxi work (which broadly reflects current, although not necessarily efficient practice), then all the costs can be attributed to the vehicle's usage as a taxi. Under this approach, annual costs will depend on the number of kilometres driven (as the vehicle will presumably have a longer working life if driven for fewer kilometres annually). Put another way, most vehicle-based costs will be related to depreciation, which will be distance rather than time related. For example, depreciation costs (using

the straight-line method) would be around 80-90 per cent of total vehicle and equipment-related costs for standard taxis and around 70-80 per cent of total vehicle and equipment-related costs for WATs¹³ (see table 4.3).

4.3 Depreciation as a share of total vehicle and equipment-related costs

	Standard	WAT
	Per cent	Per cent
Low	79	69
Medium	86	78
High	89	80

Note: Assumes the straight line depreciation method.

Source: CIE estimates.

The number of kilometres driven annually will also affect the working life of the vehicle. This in turn, affects the annual cost of the vehicle using the amortisation approach; as discussed previously this is preferred for the purposes of estimating efficient costs of providing taxi services as it produces a smoother cost profile over the life of the asset. Annual vehicle cost estimates based on the low, medium and high (based on the 2014 survey results) are shown in tables 4.4.

Our cost estimates assume that all equipment depreciates with the vehicle. This is likely to be a reasonable assumption where the costs are linked to a specific vehicle, such as vehicle conversion costs for WATs, decals and livery, internal signage and installation costs. On the other hand, some equipment could potentially have a longer life than the vehicle, including: wheelchair lifts, meter, security camera and vehicle tracking/duress alarm equipment. However, the working life of this equipment is unknown. There would also be costs associated with salvaging this equipment from a vehicle that had reached the end of its working life and re-installing it in a new taxi. This assumption is unlikely to have a significant impact on the cost estimates.

4.4 Annual vehicle costs under various scenarios

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
Average life of vehicle (years)						
Low scenario	9.28	9.28	9.28	15.54	15.54	15.54
Medium scenario	5.80	5.80	5.80	9.71	9.71	9.71
High scenario	4.09	4.09	4.09	8.59	8.59	8.59
Annual vehicle cost (\$)						
Low scenario	1 865	1 865	1 808	5 385	5 385	5 345
Medium scenario	2 763	2 763	2 678	7 617	7 617	7 562

¹³ The share of depreciation costs is lower for WATs compared with standard taxis due to the longer working life.

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
High scenario	3 773	3 773	3 657	8 403	8 403	8 342

^a Based on a real interest rate of 4.8 per cent calculated as the small business lending rate published by the RBA, less the expected inflation rate of 2.5 per cent – the midpoint of the RBA target band.

Sources: Vehicle purchase prices <http://www.redbook.com>, fit out costs from Affiliated Taxi Service provider and wheel chair conversion supplier quotes / commercial security camera providers and vehicle fleet tracking suppliers, average life of vehicle and distance travelled CIE analysis, Interest rate Reserve Bank of Australia.

Average efficient unit costs are estimated by dividing the annual vehicle costs by the corresponding number of annual hours and kilometres under each scenario (table 4.5).

4.5 Average unit costs under various scenarios

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit
Average cost per hour						
Low	81.26	81.26	78.76	217.21	217.21	215.63
Medium	75.26	75.26	72.94	192.03	192.03	190.64
High (average from 2014 survey)	72.41	72.41	70.18	187.41	187.41	186.04
Average cost per Kilometre						
Low	3.73	3.73	3.62	10.77	10.77	10.69
Medium	3.45	3.45	3.35	9.52	9.52	9.45
High (average from 2014 survey)	3.32	3.32	3.22	9.29	9.29	9.22

Source: Based on annual costs shown in table 4.4 divided by the various time/distance scenarios shown in table 4.2.

In general, unit costs are lower under the higher usage scenarios. This indicates that where there are fixed costs, efficient operators will use the vehicle as intensively as possible.

Insurance

As with other costs charged on a fixed basis, the average efficient cost of insurance (ex CTP insurance) per kilometre depends on the number of kilometres driven. The average cost per kilometre under the various scenarios is shown in table 4.6.

4.6 Insurance costs (excluding CTP) per kilometre under various usage scenarios

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per Km	cents per Km	cents per Km	cents per Km	cents per Km	cents per Km
Low	10.6	10.6	9.0	9.5	9.5	7.9
Medium	6.6	6.6	5.6	5.9	5.9	5.0

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per Km	cents per Km	cents per Km	cents per Km	cents per Km	cents per Km
High (average from 2014 survey)	4.7	4.7	4.0	5.3	5.3	4.4

Note: Estimates based on the average distance driven estimated from the 2014 survey of taxi operators.

Source: Industry quotes; CIE 2014 survey of taxi operators.

Security monitoring

Fees for security monitoring are effectively charged on a weekly or monthly basis, but are fixed to the extent that they do not depend on how much the vehicle is used.

Nevertheless, they are notionally a per hour cost as the vehicle is being monitored regardless of the distance travelled. Estimated efficient security monitoring fees under the various usage scenarios outlined previously are shown in table 4.7. As there is no regulatory requirement for security monitoring in country areas, these costs have not been included in the efficient cost estimates.

4.7 Estimated efficient security monitoring fees per hour

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per hour	cents per hour	cents per hour	cents per hour	cents per hour	cents per hour
Low scenario	12.0	12.0	0.0	12.0	12.0	0.0
Medium scenario	7.5	7.5	0.0	7.5	7.5	0.0
Average from 2014 survey	5.8	5.0	0.0	6.3	6.9	0.0

Source: CIE estimates based on industry quotes.

Administrative costs

The nature of the administrative costs outlined previously varies.

- Some costs are relatively fixed and will not vary according to the number of hours, kilometres or trips. This includes the costs associated with:
 - preparing tax returns (including payment of the Passenger Levy); and
 - paying bills (including bills for services charges on a fixed basis, such as: insurance and security monitoring).
- Other costs are likely to vary depending on the number of shifts the taxi is operated over. The number of shifts operated would be proportional to the number of trips, distance and hours implying that these costs could reasonably be allocated to either of these categories. Administrative costs in this category include:
 - scheduling drivers; and
 - record keeping.

- The only administrative costs that are unambiguously a per kilometre cost is arranging for vehicle servicing; as the number of kilometres increases the vehicle will require more frequent servicing. Nevertheless, the cost of arranging servicing would be a small share of total administrative costs.
- TSP authorisation fees potentially vary with the number of passenger trips. However, the bands are relatively wide, so variation in the number of trips for smaller TSPs is unlikely to change the authorisation fee.

In general, it is unclear what proportion of total administrative costs fall into each of the above categories. Furthermore, most administrative costs could reasonably be allocated to either distance-based costs, time-based costs or trip-based costs. In the summary, administrative costs are allocated to distance-based costs.

Based on annual costs of \$4276 (see chapter 3), efficient per unit cost estimates are shown in table 4.8. As these costs are mostly not fixed, the annual cost estimate is divided by the averages implied by the 2014 survey.

4.8 Efficient per unit administrative costs under various scenarios

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit	cents per unit
Per kilometre	3.77	3.77	3.77	4.73	4.73	4.73
Per hour	82.06	82.06	82.06	61.29	61.29	61.29
Per trip	61.06	61.06	61.06	61.29	61.29	61.29

Source: CIE estimates

Cleaning costs

Cleaning costs are allocated as follows.

- The need for external cleaning may be related to the number of hours the taxi is exposed to the environment (i.e. the more time a taxi is operated, the more it will need to be cleaned). External cleaning costs are therefore allocated as a time-based cost.
- The need for internal cleaning is more likely to be related to the number of passengers. Internal cleaning is therefore allocated as a trip-based cost.

On this basis, unit wash/cleaning cost are shown in table 4.9.

Unit external wash costs are estimated to be slightly higher for WATs. This is due to the assumption that an external wash is required every week, which is applied to both standard taxis and WATs, even though the 2014 survey suggests that WATs operate for fewer shifts per week.

Unit internal cleaning costs are estimated to be slightly higher for standard taxis. As internal cleaning is assumed to be required every second shift, differences in the number of shifts does not affect the unit cost estimates for internal cleaning. Differences in the

unit cost estimates for standard taxis and WATs is a result of the 2014 survey suggesting that WATs have a higher number of passengers per shift.

4.9 Unit wash/clean costs

	Standard			WAT		
	Sydney	Other urban	Country	Sydney	Other urban	Country
External wash						
Annual cost (\$ ex GST)	589	589	589	589	589	589
Average hours (No.)	5 211	5 211	5 211	4 484	4 484	4 484
Cost per hour (cents)	11.30	11.30	11.30	13.14	13.14	13.14
Internal clean						
Annual cost (\$ ex GST)	988	988	988	880	880	880
Average trips (No.)	7 003	7 003	7 003	6 977	6 977	6 977
Cost per trip (cents)	14.11	14.11	14.11	12.61	12.61	12.61

Source: CIE estimates.



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