FINAL REPORT

Costs of Providing Taxi Services

Victoria

Prepared for
Essential Services Commission of Victoria

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THE CENTRE FOR INTERNATIONAL ECONOMICS
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1 Methodology

This report

This report is structured as follows.

- This chapter sets out the methodology used to assess costs
- Chapter 2 summarises the findings
- Chapter 3 compares the total reported costs to those from the ESC 2008 decision on taxi fares
- Chapter 4 compares the total reported costs to a taxi survey undertaken for NSW
- Chapter 5 sets out the findings from quotes obtained from suppliers
- Chapter 6 sets out the findings for each cost item in detail.

Operator Survey

The Essential Services Commission, in conjunction with the CIE, conducted a survey of taxi operators in late 2013 and early 2014.

There were 275 responses to the survey of operators. Detailed response rates for cost items are set out in table 1.1. Over half (59 per cent) of respondents answered fully the main cost questions (fuel, network, insurance, administration and repair costs).

Survey responses can also be analysed by examining the areas in which respondents operate their taxis. Table 1.2 shows the composition of respondents and responses to related questions.[1]

The small sample size of taxis from urban areas such as Bendigo and Geelong indicates that estimates of costs specifically in those areas will likely not be reliable. We aggregate these areas into 'Urban'. This means that we present costs for three areas — Metropolitan, Outer Metropolitan and Urban.

[1] Note the total number of taxis operated is less than the sum of numbers of different types of taxis. This indicates mistaken responses, and the latter figure (1130 taxis) more reliably indicates the total number operated.

1.1 Response rates

Cost item	Number of responses	
	No.	Per cent
Fuel costs		
Responded to primary question	217	79
Did not respond	58	21
Total	**275**	**100**
Network Costs		
Responded to primary question	267	97
Did not respond	8	3
Total	**275**	**100**
Insurance		
Responded to primary question	267	97
Did not respond	8	3
Total	**275**	**100**
Administration		
Responded to one question	9	3
Responded to two questions	31	11
Responded to three questions	229	83
Did not respond to any questions	4	1
Total	**275**	**100**
Repairs and Maintenance		
Responded to one question	11	4
Responded to two questions	26	9
Responded to three questions	234	85
Did not respond to any questions	4	1
Total	**275**	**100**
Overall responses to primary cost questions (fuel, network, insurance, administration and repairs)		
Responded to all cost questions	166	60
Responded to some cost questions	109	40
Responded to no cost questions	0	0
Total	**275**	**100**

Note: The 5 surveys listed as having responded to no cost questions represent 5 missing surveys.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

1.2 Respondent characteristics

Does the operator drive	Number of responses	
	No	Per cent
Yes	209	76.6
No	64	23.4
Total	273	100
Area		
Metro	221	80.7
Outer	16	5.8
Ballarat	12	4.4
Bendigo	3	1.1
Geelong	9	3.3
Other Urban	13	4.7
Total	**274**	**100**
Number of taxis		
Standard	959	82.9
Premium	87	7.5
WAT	111	9.6
Total	**1157**	**100**
Green Top		
Green Top Standard	159	13.7
Green Top Premium	7	0.6
Green Top WAT	18	1.6
Total	**184**	**15.9**
Total taxis operated	**1130**	

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Approach to collating operator cost data

We have used the operator survey as a primary source of cost data. We present results under various methods of analysis including:

- weighted and unweighted — unweighted uses costs per taxi for each survey received. Weighted gives a weight to each survey reflecting the number of taxis covered by the operator who responded. For example, an operator providing an estimate of fuel costs per taxi who operates 100 taxis will have more impact on the average fuel cost than an operator who operates one taxi. The weighted averages we present are then estimates of the costs for the typical taxi, rather than simply the typical respondent; and
- trimmed mean, median and mean — the first two approaches seek to exclude the impact of outliers, while the mean includes all responses. For the trimmed mean we use a 5 per cent trim, which excludes the highest 5 per cent and the lowest 5 per cent of responses.

We also present information on the variability of responses, which can assist in understanding the robustness of the information collected and confidence intervals around the estimates of average costs. We show a 90 per cent confidence interval — that is, there is a 5 per cent chance that estimates are lower than the lower bound of this interval and a 5 per cent chance that estimates are higher than the upper bound of this interval.

All measures reported are conceptually the costs of a typical or average operator. We do not consider that operator survey information is of sufficient quality that differences in costs reported across operators can be used to measure efficiency — efficiency would also have to be considered in terms of the costs per taxi and the revenues per taxi. It is more likely that these differences reflect the quality of information provided.

Alongside the operator survey, we have sought quotes from suppliers, such as insurance brokers. We compare these to the information provided in the operator survey. One way of interpreting these estimates is as the cost of the marginal operator that seeks to enter the industry. That is, these are the costs faced by a new operator entering the market. In some regulated industries the concept of the marginal entrant is a useful concept for price setting, particularly where the costs of a marginal operator are higher than the average cost across the industry. However, it is not clear that this concept can be applied to the taxi industry. There is no reason to believe that the costs faced by a new entrant would be any higher than for existing operators[2]. A more useful interpretation of the industry quotes is as a cross-check on the information provided in the survey.

Estimates of cost do not include GST, which has been removed where the survey question asked for a GST inclusive figure.

Interpreting cost estimates for the ESC's price review

The costs of providing taxi services are one input into the ESC's decision on the appropriate level and structure of taxi fares. In considering the cost information collated in this briefing, it is important to note that:

- the cost estimates are based on surveys conducted in late 2013 and early 2014 seeking information for 2012/13. The costs of providing taxi services are not constant and would be expected to generally increase. For example, fuel costs or the share of time each taxi is out on the road might change. The costs most relevant for fare decisions are expected future costs; and
- the cost estimates in this report are average or typical cost estimates (from the survey) and typical cost estimates from quotes obtained from suppliers. In other regulated sectors, prices may be set for an 'efficient' business and efficient costs may differ from actual costs.

These two issues are set out below.

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2 The Melbourne Taxi Model allows for cost per taxi operated to be the same for new operators and existing operators.

Cost escalation

The costs of providing taxi services are not constant through time. It would be anticipated that, in nominal terms, costs would generally increase over time in line with general price inflation. There might also be significant changes in particular cost items from period to period. This is particularly relevant for fuel — a number of taxi operators noted that costs reported in the survey are lower than current costs because of changes in fuel prices. As discussed later, the fuel costs from the survey may well be biased upwards.

As well as changes in costs, there may also be changes in the productivity of taxi providers. For example, technology may allow taxis to be matched to customers more easily or cheaply, reducing costs of providing services.

For most taxi cost items, it is difficult to measure changes in costs over time. The ESC and other regulators have used Taxi Cost Indices, which are based on ABS consumer price components, as one method to increase costs.[3] However, the ABS consumer price components are often not directly related to the inputs into taxi services. For example, the ABS insurance price measure captures changes in the price of vehicle, health, life and property insurance, most of which are unrelated to the price of taxi insurance.

An alternative is to seek quotes from suppliers on an ongoing basis. However, there are questions about the independence of these quotes and their reliability. This has meant that regulators have tended to use ABS measures over more specific measures.

In our view, the average increase in Melbourne consumer prices is as good a measure of the likely change in costs as any other for most cost items. Using this measure implies that costs are remaining constant in real terms, or where input prices are increasing more rapidly than the consumer prices more generally this is matched by a commensurate improvement in productivity.

The only exception to this is fuel, where there are reliable independent measures of fuel prices that reflect the actual prices paid by taxi drivers.

The measurement issues above are relevant for already observed price movements. For anticipating future price movements, there is less information available. In this case we consider it reasonable to use the mid-point of the Reserve Bank of Australia's inflation target band of 2 to 3 per cent — that is, 2.5 per cent — for all costs.

- **Cost escalation should reflect consumer price and fuel price changes since 2012/13 to now and anticipated increases thereafter based on expected consumer price inflation of 2.5 per cent. The changes in fuel costs should reflect that fuel costs provided in the survey appear to be higher than would be anticipated**

3 Essential Services Commission of Victoria 2008, *Taxi fare review 2007-08: Final Report,* August.

Efficient costs

In many regulated sectors, a regulator measures the **efficient costs** of providing services, which may be below the **actual cost** of providing services. This is to incentivise efficiency for regulated monopolies.

Unlike most regulated sectors, taxis are not a monopoly. There are many operators and drivers that provide taxi services.[4] Consequently, it is reasonable to expect that taxi operators and drivers will continually seek to be as efficient as possible. Doing so enables each driver and operator to maximise their own earnings and would have no impact on future regulation.

- **At this stage, there is insufficient information to suggest that a marginal operator would face costs notably different from the average costs identified through the operator survey.**

This does not mean that there will not be operators that are more or less profitable than others, or drivers that have higher or lower earnings than others. It could be argued that rather than the average or typical cost, the ESC should consider the marginal costs of the next operator and driver. The marginal costs could be *above* those of the average, if the most efficient operators and drivers are those that are currently profitable. However, a new entrant may be able to choose a vehicle that is more efficient than the stock of vehicles in use in providing taxi services.

Based on the available data, we consider that it is statistically unlikely that the costs for a new entrant operator would be significantly different from the costs of existing operators. The Commission may want to further examine this matter in future fare reviews.

4 The operation of taxi networks could be considered to be less competitive. This issue would be addressed through intervention in that market rather than the market for taxi services.

2 Key Results

Operator total reported cost by taxi types

Taxis in Victoria operate primarily under a business model where operators share revenue with drivers and operators bear both fixed and variable costs.[5] Table 2.1 summarises the costs incurred by operators and indicates cost drivers for variable costs.

2.1 Summary of cost components

Type of Cost	Fixed (per taxi) or Variable	Cost Drivers	What is included
Fuel	Variable	Number of kilometres	Fuel costs including fuel used by bailee drivers paid for by operator
Network Fees	Fixed		Costs for membership of a network, which provides a mechanism for customers to book taxis
Insurance (including excess)	Partly variable	Number of kilometres	Includes general liability, comprehensive and workers compensation insurance, where these are purchased. The Transport Accident Charge (compulsory third party personal insurance) is identified separately.
Assignment fee (licence lease)	Fixed		Cost of leasing a taxi licence, also known as an assignment fee
Vehicle lease/purchase	Partly variable	Number of kilometres	Lease of taxi vehicles or purchase plus fit-out costs
Administration	Variable	Number of shifts operated	Administration related to operator role including cost of own time, staff costs and costs paid to other businesses for administration.
Repairs and Maintenance	Variable	Number of kilometres	Repairs and maintenance (not including costs covered by insurance, excess or costs covered by drivers). This covers own time, workshop costs and costs paid to other businesses
Site and building costs	Fixed		Site/building rental costs, e.g. Workshop, office

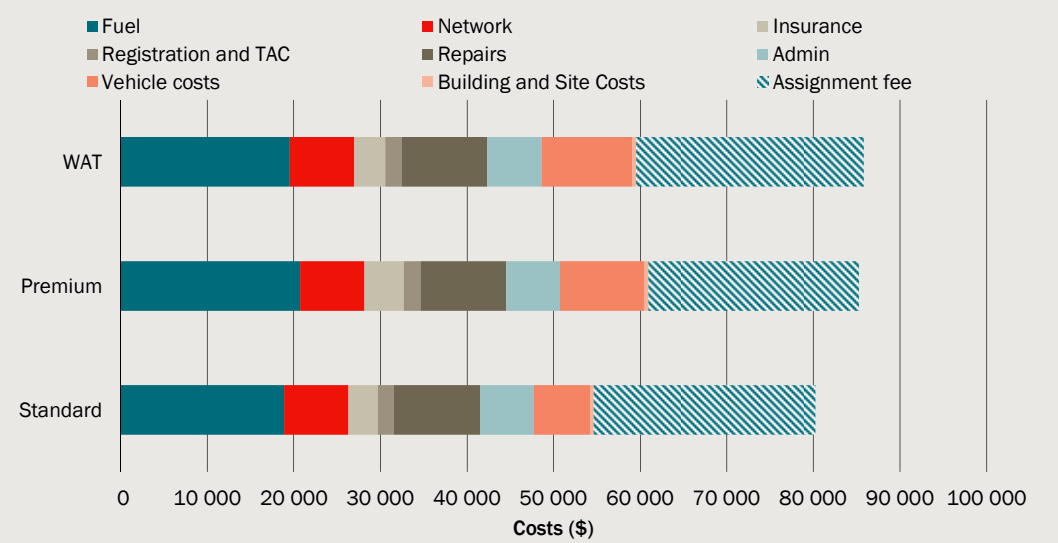
Source: The CIE analysis; ESC survey of taxi operators 2012/13

5 Most bailee arrangements are revenue sharing of 50 per cent for the driver and operator.17 per cent of operators reported that at least one of their drivers work under a fixed pay-in system. Reflecting this, we report fuel as an operator cost.

Chart 2.2 presents the total reported cost for WATs, premium taxis and standard taxis, across all areas. This includes information from operators, even if the operator did not respond to all cost questions. Standard taxis exhibit lower total costs per taxi than premium or WAT taxis. Vehicle purchase costs are lower for standard taxis. Table 2.3 summarises the estimates for different taxi types. Vehicle-related costs are estimated based on the cost of purchasing the vehicle amortised over its productive life, rather than the average vehicle lease cost because we believe the former to more accurately state vehicle costs for operators.

- **The costs of operating a standard taxi are estimated to be in the order of $80 000 per taxi per year (excluding GST), based on the survey of operators**

2.2 Total reported costs by taxi type — all areas



Note: Total reported costs based on weighted and trimmed (5 per cent) averages; costs exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

2.3 Total cost by taxi type — all areas

	Standard	Premium	WAT
	$ (excl GST)	$ (excl GST)	$ (excl GST)
Fuel	18 869	20 711	19 517
Network	7 435	7 435	7 435
Insurance[a]	3 381	4 566	3 605
Registration/Transport Accident Charge	1 866	1 866	1 866
Repairs and maintenance	9 910	9 910	9 910
Administration	6 217	6 217	6 217
Vehicle cost	6 521	9 787	10 539
Building and Site Costs	413	413	413
Total operational costs	**54 612**	**60 905**	**59 501**
Assignment fee	25 624	24 364	26 321
Total operational costs plus assignment fee	**80 237**	**85 269**	**85 823**

[a] Insurance costs could include comprehensive and public liability insurance. The Transport Accident Charge (compulsory third party personal) is identified separately.

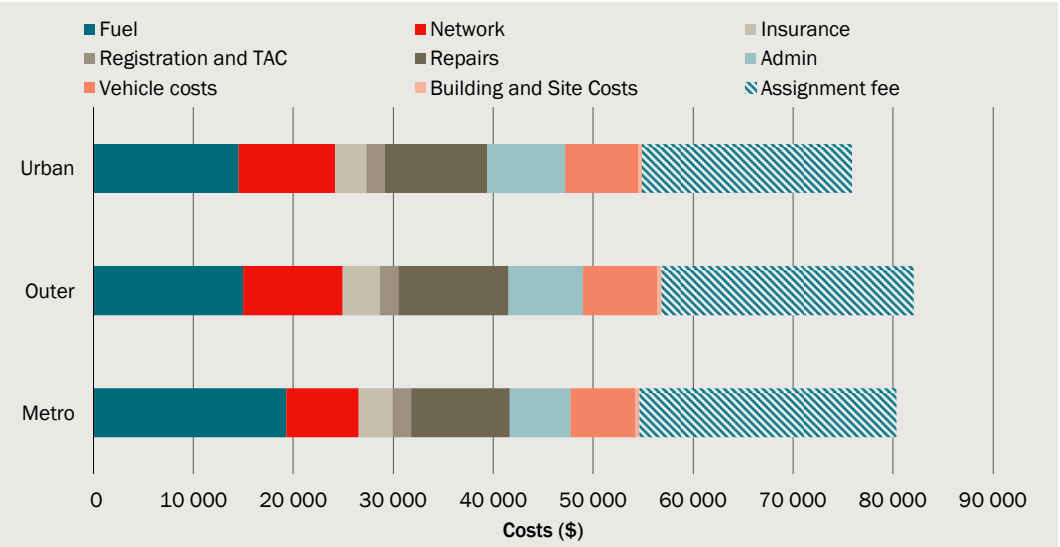
Note: Total reported costs based on weighted and trimmed (5 per cent) averages; costs exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Operator total reported cost by region of operation

Costs may differ by the area where the taxi operates. In chart 2.4 and table 2.5 we show total reported costs for standard taxis by region. Costs are relatively similar according to the responses of operators.

2.4 Total reported costs for standard taxis by area



Note: Total reported costs based on weighted and trimmed (5 per cent) averages; costs exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

2.5 Total cost by area of operations — standard taxis

	Metro	Outer	Urban	All Areas
	$	$	$	$
Fuel	19 320	15 000	14 539	18 869
Network	7 233	9 949	9 638	7 435
Insurance	3 392	3 714	3 142	3 381
Registration/Transport Accident Charge	1 866	1 866	1 866	1 866
Repairs and maintenance	9 864	11 028	10 229	9 910
Administration	6 090	7 447	7 795	6 217
Vehicle cost	6 458	7 424	7 271	6 521
Building and Site Costs	413	413	413	413
Total operational costs	**54 637**	**56 841**	**54 893**	**54 612**
Assignment fee	25 732	25 269	21 031	25 624
Total operational costs plus assignment fee	**80 369**	**82 110**	**75 924**	**80 237**

[a] Insurance costs could include comprehensive an public liability insurance. The Transport Accident Charge (compulsory third party personal) is identified separately.
Note: The figures in this table are based on a weighted trimmed mean; costs exclude GST.
Source: The CIE analysis; ESC survey of taxi operators 2012/13

We compare different methods of estimating costs for a standard taxi operating in the metropolitan area of operation in table 2.6. The preferred method of estimation is weighted, trimmed means, as this removes outliers and gives a response for a typical taxi. We find that the weighting increases the estimate of costs, because operators with more taxis report higher costs, particularly for fuel, which most likely reflects that they operate their taxis across more shifts. The process of trimming slightly reduces the estimates of total costs.

We also show the variation in total costs across the operators surveyed, for standard taxis operating in metropolitan areas. This only includes those respondents who answered every cost question (chart 2.7). The range shown in red is a 95 per cent confidence interval for total cost. This indicates that there is a wide range of responses and hence a relatively wide confidence interval as to what actual operator costs are. Note that the weighted average is also lower for operators than answered all cost questions compared to the sum of the weighted mean of each component.

There are insufficient responses to all cost questions by WAT or premium taxis in any one area of operation to provide a useful comparison.

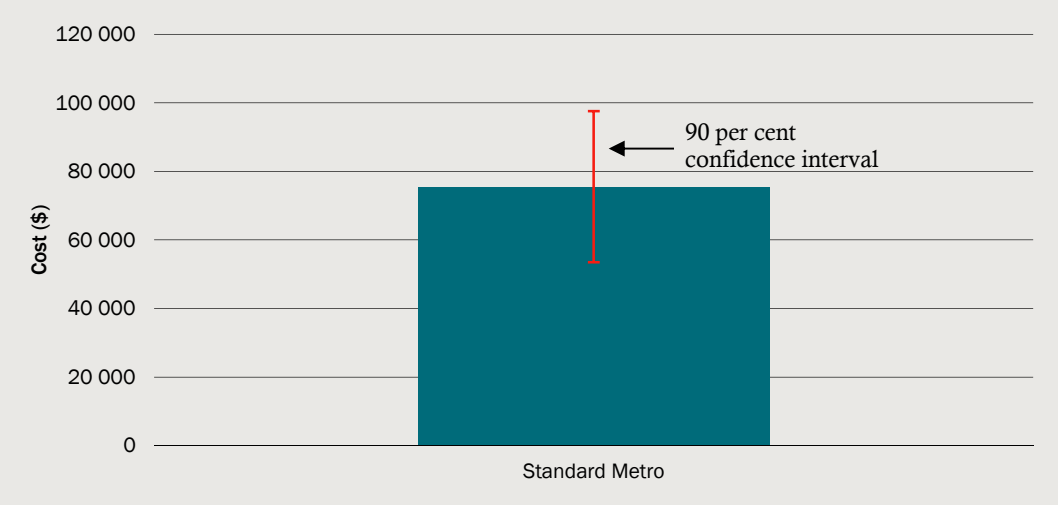
2.6 Total reported cost comparisons by method of estimation — standard metropolitan taxis

	Untrimmed			Trimmed		
	Median	Mean	Weighted mean	Mean	Weighted mean	Weighted Median
	$	$	$	$	$	$
Fuel	15 273	16 728	20 250	15 255	19 320	18 182
Network	7 273	7 164	7 228	6 994	7 233	7 318
Insurance	2 200	2 812	2 865	2 832	3 392	3 182
Registration/Transport Accident Charge	1 866	1 866	1 866	1 866	1 866	1 866
Repairs and maintenance	7 277	9 415	9 818	8 602	9 864	11 112
Administration	5 525	7 504	6 459	6 955	6 090	5 156
Vehicle cost	7 102	7 322	6 152	7 410	6 458	6 375
Building and site cost	402	402	402	413	413	413
Total operational costs	**46 918**	**53 213**	**55 040**	**50 328**	**54 637**	**53 604**
Assignment fee	25 455	24 765	25 959	24 699	25 732	25 455
Total operational costs plus assignment fee	**72 372**	**77 978**	**80 999**	**75 027**	**80 369**	**79 059**

Note: Trimmed estimates use samples with 5 per cent trimmed from the ends of the distribution. These estimates are only for costs of a standard taxi in the metropolitan area. The same figure is used for building and site costs across all measures. Costs exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

2.7 Total cost for standard metropolitan taxis



Note: Total cost shown is a weighted average for a standard metro taxi where all cost questions were answered, and therefore the total cost here will be different from the total reported cost. Total reported costs use estimates of individual components of total cost, and therefore include data from respondents who haven't answered every cost question. Shown in red is the 90 per cent confidence interval for this measure of total cost — that is, there is a 5 per cent chance that costs are higher than the upper bound of this interval and a 5 per cent chance that costs are lower than the lower bound of this interval. Costs exclude GST.

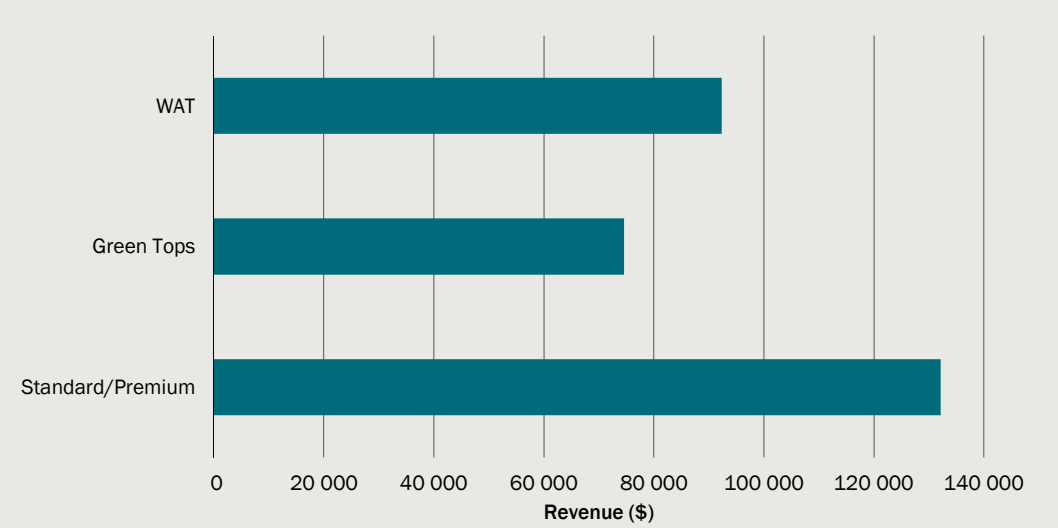
Data source: The CIE analysis; ESC survey of taxi operators 2012/13

Revenues from providing taxi services

The survey of operators sought information on the revenue from providing taxi services. We estimate annual revenue for taxi operators among the Standard/Premium, Green Top, and WAT categories. This data is summarised in chart 2.8.

- A standard or premium taxi is estimated to earn about $130 000 (per year, excluding GST) according to the responses of operators

2.8 Taxi revenue by taxi type — all areas

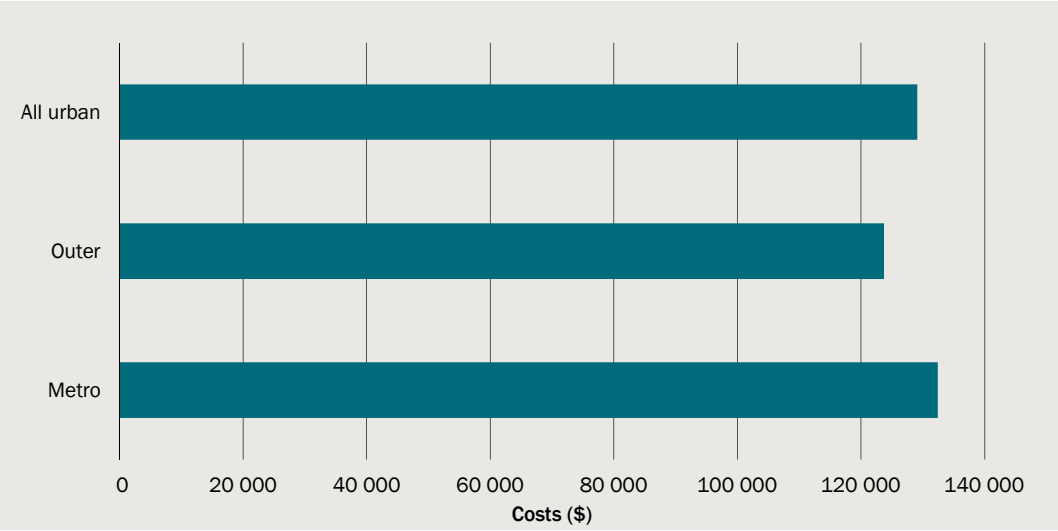


Note: Statistics based on trimmed (5 per cent) averages. Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13.

Revenue per taxi is shown in chart 2.9 by area of operation. Estimated revenue is slightly lower in outer and urban areas compared to metropolitan Melbourne.

2.9 Taxi revenue by area of operation — standard taxis



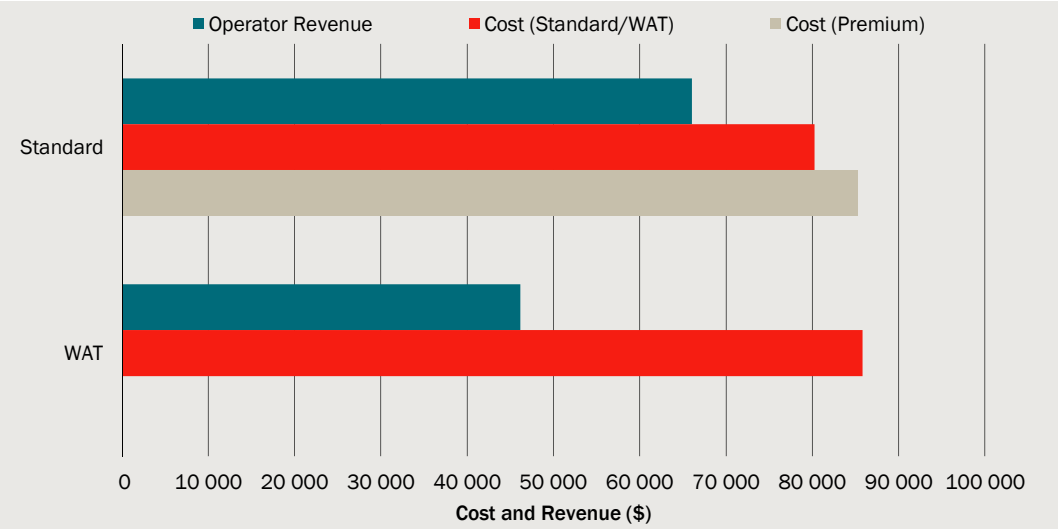
Note: Statistics based on trimmed (5 per cent) averages. Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

Revenues versus costs of providing taxi services

The information provided by operators suggests that their costs are well in excess of their revenues for standard taxis and for WATs (chart 2.10). This is based on operators receiving 50 per cent of fare revenue, which was the most common revenue sharing arrangement indicated.

2.10 Revenue and costs comparison — all areas



Note: Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

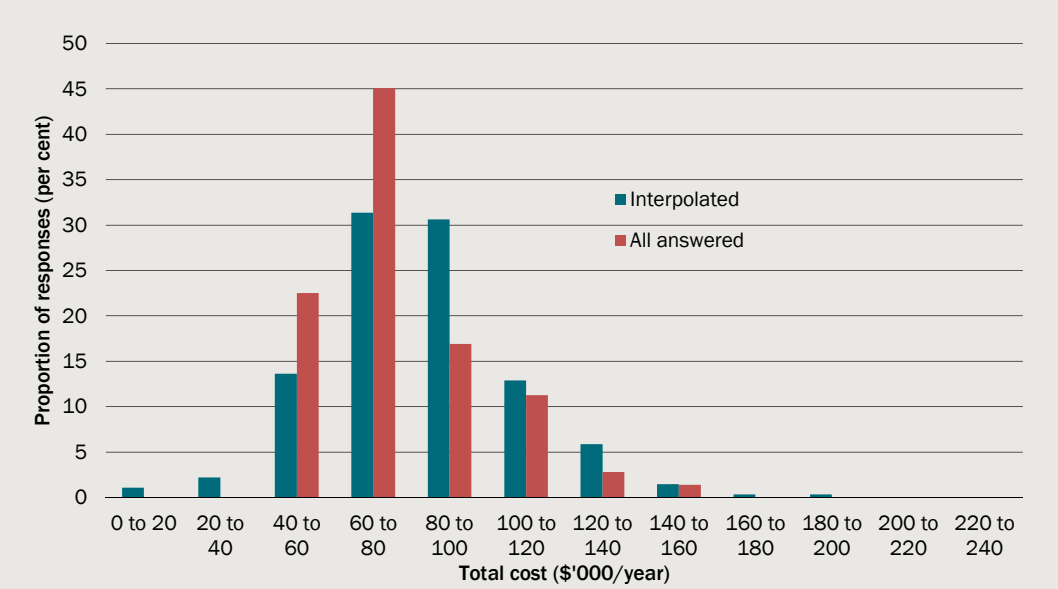
The revenue shortfall implied by these estimates are substantial, although it is difficult to believe that anyone would operate a taxi if the costs were approximately $14 000 per year higher than revenue. Hence, this conclusion may at least partly reflect the robustness of information provided.

To highlight the variability in responses, chart 2.11 illustrates the distribution of total cost per taxi among the survey respondents.

- The series in blue uses costs observed from the survey as well as interpolating costs where respondents have not provided estimates. For example, where the respondent provided all costs but fuel costs, we estimate fuel costs as a random variable with mean and standard deviation as determined by the sample. This estimation allows for total cost to be indicated where not all questions have been answered.
- The series in red represents only those estimates of total cost where the respondent **answered all cost questions**. These responses are generally lower than the responses using extrapolated figures. The variation in responses among respondents who answer all cost questions is lower, with most responses in the $60 000 to $80 000 range.

While interpretation of this is not easy, this may suggest that operators who have not answered all cost questions have misallocated some costs to other categories. However, total costs where operators report all costs are still well above reported revenues.

2.11 Distribution of total cost per taxi

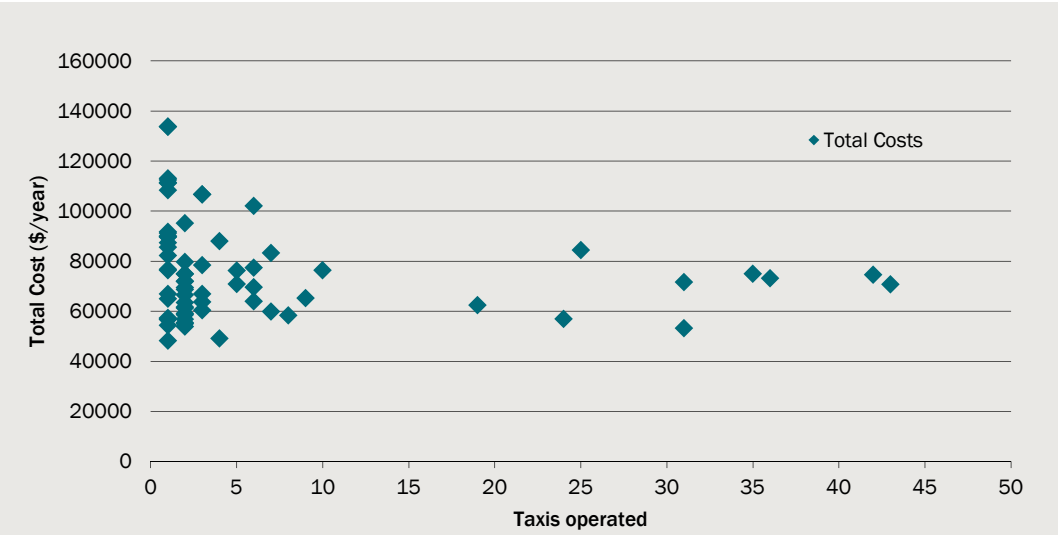


Note: These figures exclude GST and relate to all taxi types in all areas of operation. Costs exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

The distribution of total cost per taxi with respect to the number of taxis operated by the respondent is illustrated in chart 2.12. There is a higher level of variability for smaller operators, although still significant differences in per taxi costs across the larger operators in the sample. The difference in operator costs between small and large operators reinforces the justification for use of weighted means for estimation of cost against unweighted statistics.

2.12 Total costs and taxis operated



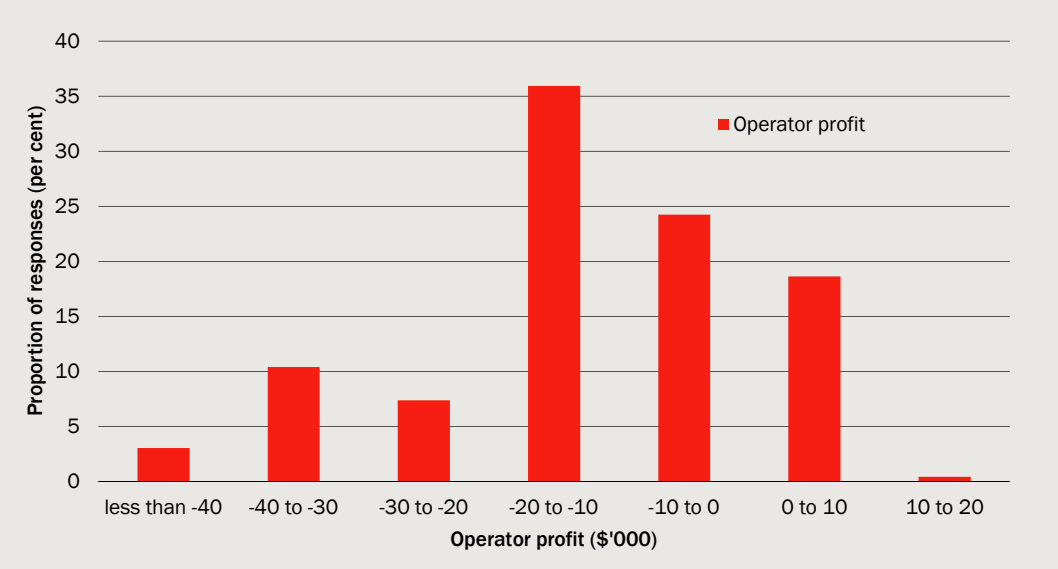
Note: This figure only shows the total cost of respondents who answered all cost questions. The average operational cost for those who answered all cost questions is lower than that for all taxi operators. Costs exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

Reported operator revenue can be compared to reported operator costs for each operator, to identify whether operators consider that they are profitable. To do this, we allow for

operator revenue to be 50 per cent of fare revenue reported by operators. The majority of operators that have provided all cost and revenue information, over 80 per cent, report that their costs exceed their revenue (chart 2.13).

2.13 Reported operator profit — revenues less costs, standard taxis all areas



Note: This figure only shows the total cost of respondents who answered all cost questions. Operator profit is operator revenue – costs (where operator revenue is 50 per cent of total revenue). Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

Comparison to industry quotes

A comparison to industry quotes is set out in table 2.14. The quotes from industry align relatively well to the responses from the survey, where these quotes are available. Note that no industry quotes are available in areas such as administration, fuel and repairs and maintenance.

2.14 Industry quote cross-checking

	Standard — metropolitan		WAT — all areas	
	Survey	Industry	Survey	Industry
	$	$	$	$
Insurance (excluding TAC)	3 392	4 332	3 605	5 014
Network	7 233	7 136	7 435	7 136
Vehicle Purchase	20 770	16 350	47 783	36 650
Vehicle Fitout	5 001	4 175	16 852	20 000
Annual vehicle cost	6 458	5 113	10 539	8 690
Assignment fee	25 732	27 528	26 321	.

Note: Network costs do not vary by taxi type. Insurance, network and assignment fees for standard taxis are shown for taxis operating in the metropolitan area. Purchase costs for standard taxis and all costs for WAT are shown for taxis operating in any area, except for annual purchase costs for standard taxis, which are only for standard taxis operating in the metropolitan area. All figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13; Industry quotes.

Validity of information provided by the survey

There is the potential for a survey of costs and revenues to provide biased results, particularly if operators consider that over-reporting costs and under-reporting revenues will lead to higher fares. We would consider that this is likely based on the following.

- 80 per cent of operators reported costs above revenues. Over 10 per cent of operators reported that costs were more than $30 000 higher than revenues. Given that exit from operating a taxi is relatively easy, it is not clear why operators would continue to operate in these circumstances, or why they would not renegotiate assignment fees
- Fuel costs are likely to be overstated in the survey results. The check on fuel costs set out in chapter 5 suggests that fuel costs are more than $3000 (excluding GST) overstated in the survey results, based on a fuel efficiency of 18 litres per 100 kilometres — the fuel efficiency level reported in the 2008 survey. Potentially, operators have overstated fuel costs because of the higher fuel costs in months during which the survey was conducted. Given that there is independent data on fuel prices available, any views on the change in costs from 2008 to 2012/13 would likely be more accurate based on price data rather than based on a comparison of survey results
- Revenue is likely substantially understated in the survey results. Operators were asked to provide information on revenue and passenger kilometres. The revenue per passenger kilometre from the survey results for standard metropolitan taxis is $1.74 per passenger kilometre (median, including GST) and $2.02 per passenger kilometre (mean, including GST). This compares to trip data of $2.44 (including GST) for 2012. In undertaking this calculation, there is likely error in both the revenue figures provided by operators and the passenger kilometre figures provided by operators.
- The survey of drivers also showed a bias in the reported hourly returns compared to hourly returns calculated from trip data (table 2.15). The survey of drivers asked for average returns for particular shifts rather than specific information for the last shifts undertaken. This is similar to the operator survey, so it might be expected that there would be similar bias evident for drivers and operators.

2.15 Comparison of driver returns from survey and trip data for drivers

	2012/13 survey of drivers	2011 trip data
	$/hour	$/hour
Day		
Mon-Thurs	9.1	12.0
Fri	9.8	12.4
Sat	9.1	11.5
Sun	9.1	13.9
Night		
Mon-Thurs	7.3	10.5
Fri	11.0	16.1
Sat	12.4	17.8
Sun	7.2	11.2

Note: These figures exclude GST and are based on drivers receiving 50 per cent of revenue.
Source: The CIE based on data provided to the ESC by the Taxi Services Commission; ESC survey of taxi drivers.

The above indicators suggest that there is likely some bias in reported costs and substantial bias in reported revenues.

3 Comparison to ESC 2008 total reported costs

The Essential Services Commission undertook a survey of taxi operator's costs for its 2008 taxi fare review.[6] This chapter compares the costs from the 2012/13 survey (for 2012/13 taxi operation) to the costs from the 2007 survey. In doing this, adjustments must be made to make estimates as comparable as possible. These adjustments include:

- ensuring the measure of average is the same — that is, median, mean, trimmed mean, weighted mean, weighted median;
- ensuring the cost items covered are the same; and
- ensuring the region considered is the same.

The focus of this chapter is comparing the costs for standard metropolitan taxis. There is insufficient information from the 2007 survey to provide a comparison for wheelchair accessible taxis, because of the design of the survey. (The ESC did not report total reported costs by taxi type in 2008.)

Adjustments made to costs

In order to compare costs across the two different surveys we:

- remove GST from relevant items from the 2007 survey;
- align the method for estimating typical cost to present median, mean and weighted mean. We do not compare trimmed means as no trimming was undertaken for the 2007 survey;
- compare costs for **standard metropolitan** taxis[7] — the 2007 survey does not distinguish between different types of taxi in questions about cost items. That is, the question on insurance costs did not ask for insurance costs for each standard, WAT, premium, green top or maxi taxi operated. Rather it asked for the average cost per vehicle. Therefore, to calculate the typical insurance costs for standard taxis in

6 ESC *Taxi Fare Review 2007-08: Final Report*

7 Because of the sample sizes of both surveys, limited information can be provided about the total reported costs for taxi types other than standard taxis. The 2012/13 survey had 275 responses, mostly for standard taxis in the metropolitan area, whereas the 2007 survey had only 163 responses (excluding country areas which were not surveyed in 2012/13). Because of the insufficient sample size, it is not useful to compare estimates of WAT costs in the metropolitan area. Additionally, the fact the 2007 survey does not distinguish between different taxi types in questions about fuel, insurance, purchase, lease or assignment costs while the 2012/13 survey does means that an effective estimation of costs for 2007 would have to exclude operators who operate multiple taxi types. Thus the sample size of operators who operate only standard taxis in the metropolitan area is reduced to 62 respondents who operated 203 taxis between them.

metropolitan areas we used only responses from operators who indicated they operate only standard taxis; and

- The coverage of cost items is not wholly consistent across the two surveys. We make further adjustments to ensure consistency, as described below. These results are referred to as 'Adjusted' and results only making the changes in the above dot points as 'Unadjusted'.

Comparison of total reported costs — unadjusted

Table 3.1 presents the total reported cost for standard metro taxis in 2007, 2008 and 2012/13 using unadjusted, median costs. In table 3.1 there has been no adjustment to the standard metro total reported cost for 2007 save for the exclusion of GST. The escalators used for each cost item to adjust costs from 2007 to 2008 are from the *Taxi Fare Review 2007-08*.

- Overall, unadjusted operational costs plus the assignment fee has increased in nominal terms by 7.5 per cent from 2008 to 2012/13.
- The largest cost increase is for administration costs, which reflects the method of estimation, as discussed further below.

3.1 Comparison with 2007/08 survey — standard metro taxis, unadjusted, median

Cost item	2008 median	2012/13 median	Change 2008 to 2012/13
	$/year	$/year	Per cent
Fuel (LPG)	14 912	15 273	2.4
Network	6 223	7 273	16.9
Insurance	2 298	2 200	-4.3
Repairs	8 427	7 277	-13.6
Administration/Office	2 278	5 927	160.2
Vehicle	6 486	7 102	9.5
Registration	2 174	1 866	-14.2
Total operational cost	**42 796**	**46 917**	**9.6**
Assignment	25 056	25 455	1.6
Total operational cost plus assignment fee	**67 852**	**72 372**	**6.7**

Note: 'Adjusted' means the methods of calculating the statistic for 2007 are changed to the methods used in 2012/13 as much as possible, improving the use of direct comparison with 2012/13 costs. These costs are only for standard taxis operating in the metropolitan area. 2008 total reported costs are escalated from the 2007 survey results shown using the increases in cost shown in the escalators column. GST has been excluded for the results in all columns.

Source: ESC survey of taxi operators 2007, Essential Services Commission 2008 *Taxi Fare Review 2007-08: Final Report*, ESC survey of taxi operators 2012/13, The CIE analysis.

Comparison of total reported costs — adjusted

The methodologies between the surveys are not entirely consistent. To make methodologies as consistent as possible we have made the following adjustments.

- Fuel — the 2007/08 survey did not ask for fuel costs in aggregate. Instead, it built up fuel cost from kilometres per shift, shifts per year, fuel efficiency and cost per litre. In doing this, it used the median for each of the above items. To make this estimate more comparable with the approach used in the 2012/13 survey we directly estimate fuel costs for each operator and then take the median of this. This reduces the 2008 fuel cost.
- Network - change network costs that are reported in cost per month to annual costs. The distribution of responses to the network cost question for the 2007 survey is shown in chart 3.6. Responses less than $1000 were deemed indicative of misreporting and we assume they are reports of network costs per month. Given the small sample size of responses it was preferred to convert the figures into an annual cost rather than exclude those responses entirely.
- Insurance — the 2007/08 survey used a median of each component of insurance costs. To be consistent with the 2012/13 approach we instead calculate insurance costs per operator (per taxi) and take a median of this. This reduces the 2008 insurance cost;
- Administration — we include own time for administration from the 2007/08 survey to be consistent with the approach used in the 2012/13 survey. This increases 2008 administration costs; and
- Repairs and maintenance (including tyres) — repairs and maintenance costs were built up from components in the 2007/08 survey. To be consistent with the 2012/13 survey approach, we have adjusted to the median of each operators total costs. This reduces the 2008 repairs cost.

Table 3.2 similarly presents a comparison of the 2007/08 and 2012/13 total reported costs using medians and adjusted costs.

- Overall, median operational costs plus the assignment fee has increased by 4.5 per cent from 2008 to 2012/13 once the we adjust the survey methods to reflect similar methodologies.

3.2 Comparison with 2007/08 survey — standard metro, adjusted median

Cost item	2008 median	2012/13 median	Change 2008 to 2012/13
	$/year	$/year	Per cent
Fuel (LPG)	12 301	15 273	24.2
Network	6 223	7 273	16.9
Insurance	1 976	2 200	11.3
Repairs	6 032	7 277	20.6
Administration/Office	8 990	5 927	-34.1
Vehicle	6 486	7 102	9.5
Registration	2 174	1 866	-14.2
Total operational costs	**44 182**	**46 917**	**6.2**
Assignment	25 056	25 455	1.6
Total operational costs plus assignment fee	**69 238**	**72 372**	**4.5**

Note: 'Adjusted' means the methods of calculating the statistic for 2007 are changed to the methods used in 2012/13 as much as possible, improving the use of direct comparison with 2012/13 costs. These costs are only for standard taxis operating in the metropolitan area. 2008 total reported costs are escalated from the 2007 survey results shown using the increases in cost shown in the escalators column. We exclude GST for the results in all columns.

Source: ESC survey of taxi operators 2007, Essential Services Commission 2008 *Taxi Fare Review 2007-08: Final Report*, ESC survey of taxi operators 2012/13, The CIE analysis.

We have also calculated the weighted means from the two surveys. These results are set out in table 3.3. Using a weighted mean, operational costs plus the assignment fee has increased from 2008 to 2012/13 by 6.3 per cent.

3.3 Comparison with 2007/08 survey — standard metro, adjusted weighted mean

Cost item	2008 weighted mean	2012/13 weighted mean	Change 2008 to 2012/13
	$/year	$/year	Per cent
Fuel (LPG)	16 801	20 250	20.5
Network	5 590	7 228	29.3
Insurance	2 318	2 865	23.6
Repairs	9 051	9 818	8.5
Administration/Office	8 597	6 861	-20.2
Vehicle	6 515	6 152	-5.6
Registration	2 124	1 866	-12.1
Total operational cost	**50 996**	**55 040**	**7.9**
Assignment	25 180	25 959	3.1
Total operational cost plus assignment fee	**76 176**	**80 999**	**6.3**

Note: 'Adjusted' means the methods of calculating the statistic for 2007 are changed to the methods used in 2012/13 as much as possible, improving the use of direct comparison with 2012/13 costs. These costs are only for standard taxis operating in the metropolitan area. 2008 total reported costs are escalated from the 2007 survey results using the escalators in the ESC *Taxi Fare Review 2007-08: Final Report*. We exclude GST for the results in all columns.

Source: ESC survey of taxi operators 2007, Essential Services Commission 2008 *Taxi Fare Review 2007-08: Final Report*, ESC survey of taxi operators 2012/13, The CIE analysis.

We calculated the weighted means and weighted medians of cost for both surveys with trimming. We use a 5 per cent trim for the data from both surveys. We present the trimmed, weighted means in table 3.4 and the trimmed, weighted medians in table 3.5.

The weighted, trimmed mean measure exhibits a similar difference from 2008 to 2012/13 as the untrimmed, weighted mean, giving an increase in operational costs plus the assignment fee of 7.1 per cent.

3.4 Comparison with 2007/08 survey — standard metro, adjusted, weighted, trimmed mean

Cost Item	2008 weighted, trimmed mean	2012/13 weighted, trimmed mean	Change 2008 to 2012/13
	$/year	$/year	Per cent
Fuel (LPG)	16 624	19 320	16.2
Network	5 475	7 233	32.1
Insurance	2 285	3 392	48.5
Repairs	8 842	9 864	11.6
Administration/Office	8 597	6 503	-24.4
Vehicle	5 596	6 458	15.4
Registration and TAC	2 168	1 866	-13.9
Total operational cost	**49 587**	**54 637**	**10.2**
Assignment	25 460	25 732	1.1
Total operational cost plus assignment fee	**75 048**	**80 369**	**7.1**

Note: 'Adjusted' means the methods of calculating the statistic for 2007 are changed to the methods used in 2012/13 as much as possible, improving the use of direct comparison with 2012/13 costs. These costs are only for standard taxis operating in the metropolitan area. 2008 total reported costs are escalated from the 2007 survey results using the escalators in the ESC *Taxi Fare Review 2007-08: Final Report*. We exclude GST for the results in all columns.

Source: ESC survey of taxi operators 2007, Essential Services Commission 2008 *Taxi Fare Review 2007-08: Final Report*, ESC survey of taxi operators 2012/13, The CIE analysis.

The trimmed, weighted median measure has less change between 2008 and 2012/13 than other measures of cost, indicating an increase of 1.3 per cent in the operational costs plus the assignment fee. This largely reflects a smaller increase (actually a decline) in fuel costs compared to 2008. This is because there is a skew to reported fuel costs, with a number of operators reporting very low fuel costs in the 2007 survey. These operators impact on the weighted mean but not the weighted median.

3.5 Comparison with 2007/08 survey — standard metro, adjusted, trimmed, weighted median

Cost item	2008 weighted, trimmed median	2012/13 weighted, trimmed median	Change 2008 to 2012/13
	$/year	$/year	Per cent
Fuel (LPG)	18 851	18 182	-3.6
Network	5 695	7 318	28.5
Insurance	3 459	3 182	-8.0
Repairs	8 650	11 112	28.5
Administration/Office	5 239	5 569	6.3
Vehicle	6 277	6 375	1.6
Registration and TAC	2 348	1 866	-20.5
Total operational cost	**50 519**	**53 604**	**6.1**
Assignment	27 562	25 455	-7.6
Total operational cost plus assignment fee	**78 080**	**79 059**	**1.3**

Note: 'Adjusted' means the methods of calculating the statistic for 2007 are changed to the methods used in 2012/13 as much as possible, improving the use of direct comparison with 2012/13 costs. These costs are only for standard taxis operating in the metropolitan area. 2008 total reported costs are escalated from the 2007 survey results using the escalators in the ESC *Taxi Fare Review 2007-08: Final Report*. We exclude GST for the results in all columns.

Source: ESC survey of taxi operators 2007, Essential Services Commission 2008 *Taxi Fare Review 2007-08: Final Report*, ESC survey of taxi operators 2012/13, The CIE analysis.

Detailed adjustments made to the 2007/08 survey

Fuel Costs

The 2007 results are calculated using a combination of different survey responses including:

- Litres of fuel used per 100km
- Cost in $ per litre
- Kilometres travelled during last shift (if the operator is also a driver)
- Average number of day and night shifts per week

The methodology used is taking the median of the responses to each question and then multiplying these medians as needed to obtain the cost of fuel per kilometre and kilometres per year. Thus the fuel cost per year can be determined, yet it is highly dependent on the estimated kilometres per year. The total reported cost is sensitive to changes in the estimate of kilometres per year because in addition to fuel, servicing cost and tyre replacement cost are calculated using kilometres per year as an input.

Therefore the adjustment of the total reported cost to calculate the median price operators pay per taxi makes it more comparable to the 2012/13 results.

Insurance Costs

The 2007 survey more specifically requires respondents to estimate different items of insurance cost including comprehensive insurance and 3rd party property insurance. The 2007 survey includes 'registration' as a component of insurance costs. This is composed of primarily the Transport Accident Charge (TAC) and also other registration costs. The 2012/13 total reported cost includes the TAC separately and so the insurance result as reported in each year will not be comparable without separating registration/TAC costs from the rest of insurance costs.

Administration Costs

The cost item of administration and office includes building and site costs for both 2007/08 and 2012/13. Office costs and administration costs are not disaggregated in the 2007 survey, unlike in the 2012/13 survey, which has separate questions about each category.

The 2007 results did not include the value of the operators own time spent on the administration of taxis they operate. These have been included in the adjusted figures, which exceed the 2012/13 estimates of administration cost as a result. This is the main determinant in the difference between the costs from 2008 to 2012/13. This cost has been included using the same average cost

Purchase Costs

The 2007/08 Review calculates purchase costs in a very different way to costs for 2012/13. The survey asks respondents about the residual value of the vehicle after its usable life and the nominal interest of financing. The 2012/13 survey results exclude any residual value of the vehicle and assume a nominal interest rate of 8.2 per cent based on the Reserve Bank of Australia indicator lending rate for business.

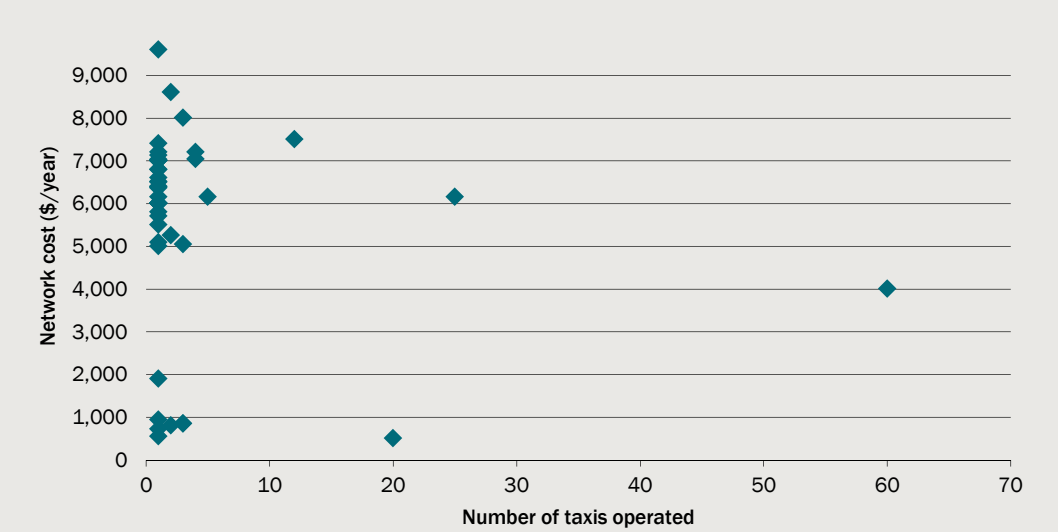
Additionally the 2007/08 results do not include fit-out costs in the annualised cost of the vehicle while the 2012/13 results do. This will tend to indicate the 2007/08 cost estimates understate the real annual vehicle cost.

We have not adjusted the surveys for this cost item.

Network costs

The network costs from the 2007 survey suggest that a number of operators reported monthly costs (chart 3.6). At the time, the median was taken, which minimises this issue. Alternative measures are likely to be biased downwards from this. We have adjusted each response that was less than $1000 by multiplying it by 12 to an annual figure.

3.6 Distribution of responses to network cost question – 2007 survey



Data source: ESC survey of taxi operators 2007, The CIE analysis.

4 Comparison to the Sydney taxi survey

In 2010/11, the Independent Pricing and Regulatory Tribunal of NSW conducted a survey of taxi operators and drivers to obtain cost information.[8] In this chapter, we compare the costs from the NSW survey to the costs from the 2012/13 ESC survey of taxi operators.

Table 2.3 compares the total reported cost for standard urban taxis in NSW (i.e. Sydney) from the IPART review to standard all areas taxis in Victoria from this review. Both total reported cost figures are created with trimmed means (5 per cent trim).

- We compare standard all area costs from the ESC 2012/13 survey to align to the definition of urban in the IPART review. In IPART 2012 urban refers to all metropolitan areas of Sydney, Newcastle, Wollongong and other non-country areas. In contrast, the ESC review defines 'urban' as only those areas which are not part of the metro or outer areas. Country areas were not part of the 2012/13 survey. Therefore the IPART 2012 Standard Urban total reported cost is analogous in scope to the ESC 2012/13 Standard All areas total reported cost.

The comparison shows higher costs for taxis operating in NSW. This difference is entirely attributable to insurance costs, which are substantially higher in NSW than in Victoria. The results of the surveys between states are similar to the results of quotes from suppliers of insurance. The reason for the substantial difference in insurance costs is not known.

Interestingly, the 2010/11 IPART survey did not indicate that operators had costs in excess of revenues, as the 2012/13 ESC survey did.

- Revenue for operators was constructed from the IPART survey based on pay-in data reported by drivers — hence revenue was not a self-reported figure
- Revenue for operators for the ESC survey was self-reported by operators.

These differences in approaches will have important implications if there is systematic bias in responses. The type of bias that might be evident would be that operators overstate costs and understate revenues. It is also possible that drivers overstate their costs (i.e. pay-ins). These biases would compound in the case of the ESC survey to lead to operators appearing unprofitable but would offset in the case of the IPART survey.

8 The CIE 2012, *Reweighting of the Taxi Cost Index: Final Report*, prepared for the NSW Independent Pricing and Regulatory Tribunal, April.

4.1 Comparison with NSW survey — standard all areas, trimmed unweighted mean

Cost item	IPART 2010/11	ESC 2012/13	Change
	$/year	$/year	%
Fuel (LPG)	14 615	15 127	3.5
Network	7 231	7 515	3.9
Insurance (including TAC)	13 163	4 776	-63.7
Repairs	7 562	9 179	21.4
Administration	9 223	7 147	-22.5
Building and Site Costs		413	
Vehicle	5 805	7 355	26.7
Total operational costs	**57 599**	**51 512**	**-10.6**
Assignment	28 789	24 434	-15.1
Total	**86 388**	**75 946**	**-12.1**

[a] This is the insurance total reported cost component from 2012/13 added to the TAC component ($1650) to make it comparable to the insurance cost component from IPART. GST has been excluded for the results in all columns.

Note: 5% has been trimmed off each end of the sample distribution for both the 2012 and 2012/13 data.

Source: IPART 2012 *Reweighting of the Taxi Cost Index*, ESC survey of taxi operators 2012/13, The CIE analysis.

Detailed comparison of assumptions and dataset

Insurance Costs

The largest difference in costs is insurance costs, which are substantially higher in the IPART review. Cross-checking with industry quotes for insurance costs in Melbourne indicates that the 2012/13 survey results are close to the actual industry costs rather than the survey responses not being representative of the actual costs charged in the industry.

Assignment Costs

Similarly assignment costs are higher in the IPART review however assignment costs are easily verifiable with comparison to industry quotes. Assignment costs for taxis in the metropolitan area of Melbourne are lower than costs for taxis in Sydney.

Administration Costs

Administration costs are higher in the 2010/11 IPART survey. For the IPART review, administration costs were estimated as the residual between estimated revenues and all other costs. Hence this may include a return to operators as well for bearing risk.

5 Estimates from industry quotes

This chapter provides further details on the estimates based on industry quotes, which are a useful cross-check for the information provided from the survey.

Insurance costs

To verify the insurance cost estimates obtained from the survey, we also estimate insurance costs based on a quote from a supplier (and other information). The premium for comprehensive insurance will depend on a range of factors, including the insurer's previous record and the age and type of vehicle. For a standard taxi (Ford Falcon), the premium for comprehensive insurance would typically range between $2000 and $3500 (including GST). For a WAT, the premium would typically be in the range of $3000 to $4000 (including GST). Some operators also choose to take out public liability insurance at a cost of $200 per year.

The Transport Accident Charge is a compulsory charge and covers third party personal damage. This charge depends on the class of vehicle and the postcode where it is garaged. Stamp duty, as well as GST is payable on the Transport Accident Charge.

5.1 Estimated insurance costs

	Lower bound	Upper bound	Mid-point
	$ per year	$ per year	$ per year
Standard taxi			
Comprehensive insurance[a]	1 818	3 182	2 500
Transport Accident Charge[b]	1 098	2 202	1 650
Public liability[a]	182	182	182
Total	3 098	5 565	4 332
WAT			
Comprehensive insurance[a]	2 727	3 636	3 182
Transport Accident Charge[b]	1 098	2 202	1 650
Public liability[a]	182	182	182
Total	4 007	6 020	5 014

Note: GST has been excluded.

Source: [a] Based on supplier quote. [b] Transport Accident Commission website, http://www.tac.vic.gov.au/about-the-tac/our-organisation/transport-accident-charge, accessed 3 February 2014.

This information suggests that if the operator chooses to purchase both comprehensive and public liability insurance, as well as the compulsory Transport Accident Charge, the

total cost would range between around $3100 and $5600 (excluding GST) for a standard taxi and $4000 and $5000 (excluding GST) for a WAT.

The insurance costs above do not include any excess charges that may be paid by operators (or drivers). Typical excess charges are $1000 (including GST).

Operators that have bailee drivers are required to have workers compensation insurance provided by WorkSafe (a government provider). This cost depends on the level of remuneration. We estimate it would be $971 per taxi for 2012/13 (excluding GST).[9] This assumes bailee taxi drivers receive $70 000 in remuneration (in the form of retained fares, bonuses, etc.) per taxi.

Licence plate lease costs

Licence transfer and assignment prices are reported by the Taxi Services Commission. During December 2013, the average taxi assignment price in Melbourne was $2294 per month (excluding GST), implying an annual cost of $27 528.

Network fees

Quotes from two Melbourne networks suggested network fees ranged between around $561 and $644 (including GST) for a 28 day period. This implies an annual cost of $7300 to $8400 (including GST).

Vehicle-related costs

A quote from a broker was broadly similar to the estimates obtained from the survey. An alternative methodology is to build up these costs based on quotes from suppliers and other information. Based on this approach, vehicle-related costs are estimated to be significantly lower at around $5113 for a standard taxi and $8690 for a WAT (table 5.2). These estimates are based on the cost of the vehicle, plus any fit-out and modification costs necessary for the vehicle to be used as a taxi. These costs are then annualised using the following assumptions:

- An average vehicle life of 4.5 years for a standard taxi and 8.2 years for a WAT — these estimates are based on survey data. We assume a residual vehicle value of $700 at the end of this life.
- A real cost of capital of 5.7 per cent — this is based on based on an average nominal lending rate to small businesses of 8.2 per cent in 2013, as reported by the Reserve Bank of Australia (although one supplier suggested the nominal lending rate to taxi operators is more like 12 to 13 per cent), less the expected inflation rate of 2.5 per cent.

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9 Premium estimated using the WorkSafe premium simulator, from: http://www.worksafe.vic.gov.au/insurance-and-premiums/calculating-your-insurance-premium, accessed 7 March 2014.

5.2 Estimated vehicle-related costs (excluding GST)

	Standard taxi[a]	WAT[b]
	$	$
Capital costs		
Vehicle[c]	16 350	36 650
LPG conversion[d]	2 375	-
Fit out[e]	1 800	1 800
Wheelchair lift installation[f]	-	18 200
Total capital cost	20 525	56 650
Annual total capital cost		
Annualised cost over vehicle life[g]	5 113	8 690

[a] Based on a 2011 Ford Falcon. [b] Based on the average of a 2010 and 2011 Toyota Hiace. [c] Vehicle price estimate is obtained from: http://www.carsales.com.au/car-valuations/, accessed 31 January 2014. [d] LPG Conversions are estimated to range between $1750 and $3000. [e] Based on supplier quote. [f] Based on supplier quote. g Annualised estimate assumes an average productive life of 4.5 years for a standard taxi and 8.2 years for a WAT, based on survey data. The real cost of capital is assumed to be 5.7 per cent, based on an average nominal lending rate to small businesses of 8.2 per cent in 2013, as reported by the Reserve Bank of Australia, less the expected inflation rate of 2.5 per cent.

Source: As noted in table.

Fuel costs

We can cross-check reported fuel costs against costs estimated using the reported number of kilometres driven per year and estimates of fuel cost per litre and efficiency, and we show the results of cross-checking in table 5.3. The crosscheck indicates reported fuel costs in the 2012/13 survey are higher than the costs implied by current fuel prices and fuel efficiency.

5.3 Fuel cost crosschecking – Standard metro

LPG Price	Fuel efficiency	Distance travelled	Estimated fuel cost	Survey fuel cost
$/L	L/100km	km	$/year	$/year
0.63 [a]	18.0 [b]	140 035	16 003	19 320

[a] 2012/13 financial year average LPG price calculated using monthly statistics from: http://www.racv.com.au/wps/wcm/connect/racv/Internet/primary/my+car/advice+_+information/fuel/petrol+prices/lpg/historical+lpg+prices, accessed 21 February 2014. [b] 2007 average fuel efficiency data from ESC survey of taxi operators 2007; average calculated by The CIE.

Note: Distance travelled is the average distance using 2012/13 survey data. Distance travelled and fuel efficiency are for standard metro taxis only. 2007 survey data was used to calculated fuel efficiency because RACV efficiency statistics concern all vehicles and not only taxis. Taxis have worse fuel efficiency than the average vehicle (18.2L/100km compared to 12.6L/100km). Figures exclude GST.

Source: ESC survey of taxi operators 2007, ESC survey of taxi operators 2012/13, RACV vehicle cost statistics, The CIE analysis.

6 Detailed cost estimates from survey of operators

This chapter provides details on the cost estimates obtained from the operator survey.

Fuel costs

85 per cent of responding operators indicated they paid for fuel costs incurred by bailee drivers. Table 6.2 compares fuel costs for different taxi types and different areas of operation (for standard taxis only).

Fuel costs are a variable cost of running a taxi. The primary cost driver is the distance travelled by the vehicle.

Table 6.1 compares estimates of annual fuel cost using different methods. The trimming procedure decreased the estimates of average fuel consumption indicating that the distribution of fuel cost is positively skewed. The weighted mean is higher than the unweighted mean, both with and without trimming. This indicates that larger taxi operators are using more fuel. This does not necessarily indicate they are less efficient, because taxis run by larger operators typically are operated across more shifts.

6.1 Comparison of fuel cost estimates — standard metropolitan taxis

	Median	Mean	Weighted Mean
	$/year	$/year	$/year
Trimmed	na	15 255	19 320
Untrimmed	15 273	16 728	20 250

Note: Estimates are for standard taxis operating in the metropolitan area. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

6.2 Fuel cost — detailed estimates

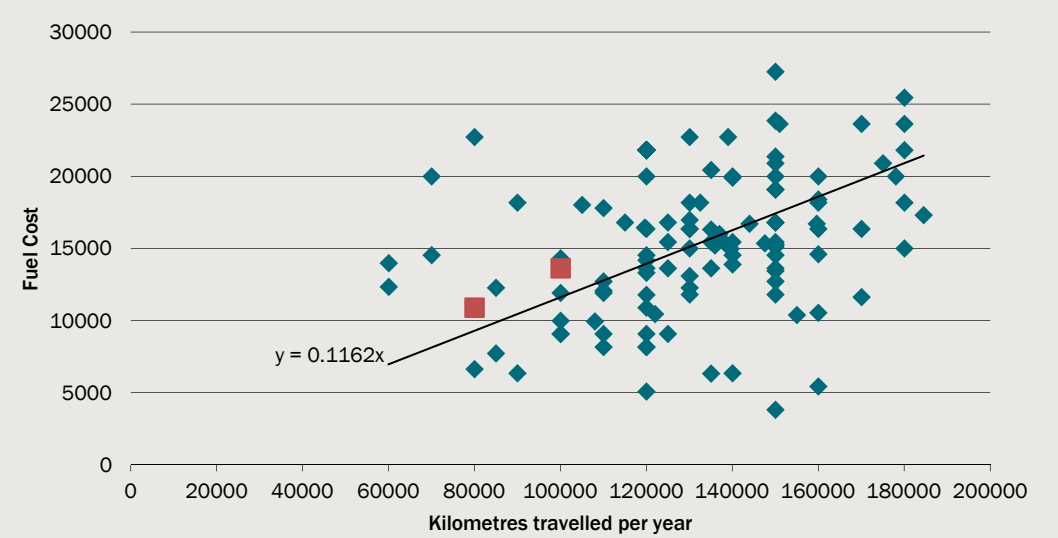
	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
Standard	182	3 818	27 273	15 273	827	18 869	10 402	17 277	20 461
Premium	32	3 782	31 818	21 818	66	20 711	9 074	17 350	24 072
WAT	33	11 364	36 364	16 364	70	19 517	8 508	16 473	22 562
All types	**247**	**3 782**	**36 364**	**15 909**	**963**	**19 039**			
Standard									
Metro	135	3 818	27 273	15 273	765	19 320	8 474	18 202	20 437
Outer	12	5 455	21 818	15 865	14	15 000	3 118	13 472	16 528
Urban	35	5 091	23 873	15 125	48	14 539	3 512	13 407	15 671

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Costs by area of operation are for standard taxis only. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

The distance travelled by a taxi annually is positively related to the fuel costs as indicated by chart 6.3 below, although the relationship is surprisingly weak. The data points shown in red represent those respondents who provided estimates of fuel costs but also indicated they did not pay for bailee drivers' fuel. The estimated fuel cost per kilometre travelled is similar to results for those who indicated they paid for bailee drivers' fuel costs, while we would expect it to be lower. If the operator does not pay for bailee drivers, they should have lower fuel costs for a given number of kilometres travelled. We do not observe this in the data, potentially because of misreporting issues and the small sample size.

6.3 Kilometres travelled and fuel cost



Note: Points in red represent respondents who indicated they did not pay for bailee drivers' fuel. Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

Network costs

Network cost estimates are presented in table 6.5.

Network costs are a fixed cost of operation and a high response rate to the survey question indicates estimates are reliable of this cost component. Respondents who operate in outer suburban and urban areas report higher network costs.

Table 6.4 presents a comparison of different estimates of network costs.

6.4 Comparison of network cost estimates — standard metropolitan taxis

	Median	Mean	Weighted Mean
	$/year	$/year	$/year
Trimmed	na	6 994	7 233
Untrimmed	7 273	7 164	7 228

Note: Estimates are for all types of taxis operating in the metropolitan area. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

6.5 Network cost — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
All types	267	3 545	12 545	7 320	1 111	7 435	2 883	7 074	7 795
All types				0					
Metro	213	3 545	12 545	7 273	1 016	7 233	2 703	6 857	7 609
Outer	16	8 211	11 345	10 849	23	9 949	1 197	9 322	10 576
All urban	37	5 455	11 364	10 564	71	9 638	1 722	9 041	10 234

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Costs by area of operation are for all types of taxis. The survey does not differentiate between network costs by taxi type. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Insurance costs

Insurance costs could potentially vary, depending on the intensity of use of taxis. For example, single shifted vehicles could potentially pay lower insurance premiums compared to double shifted vehicles. However, based on survey responses there is no statistically significant relationship between insurance costs and the kilometres travelled. This is not surprising given that there was almost no relationship between kilometres driven and fuel costs, and fuel costs should be clearly and closely related to kilometres driven.

It is possible some respondents interpreted the insurance cost question as being solely about vehicle insurance costs, and did not include workers compensation insurance. We collected survey data about the different types of insurance operators had and 75% of operators indicated they had workers compensation insurance.

The cost of workers compensation insurance provided by WorkSafe (the government provider) is $971 for 2012/13. (excluding GST).[10] This assumes taxi drivers receive $70000 in remuneration (in the form of retained fares, bonuses, etc.).

We use survey results to the insurance cost question to estimate total insurance costs, and do not make any adjustment to add workers compensation insurance. The survey question asks for

The estimated insurance costs are set out in table 6.7. Table 6.6 compares estimators of insurance costs.

6.6 Insurance cost estimates — standard metropolitan taxis

	Median	Mean	Weighted Mean
	$/year	$/year	$/year
Trimmed	na	2 832	3 392
Untrimmed	2 200	2 812	2 865

Note: This table presents estimates for standard taxis operating in the metropolitan area. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

10 Premium estimated using the WorkSafe premium simulator, from: http://www.worksafe.vic.gov.au/insurance-and-premiums/calculating-your-insurance-premium, accessed 7 March 2014.

6.7 Insurance cost — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
Standard	218	1 300	6 773	2 406	940	3 381	2 791	2 998	3 764
Premium	38	1 364	6 773	2 727	70	4 566	2 971	3 621	5 510
WAT	44	1 545	7 481	3 182	106	3 605	1 915	3 011	4 198
All types	**300**	**1 300**	**7 481**	**2 545**	**1 116**	**3 492**			
Standard									
Metro	171	1 300	6 773	2 200	878	3 392	3 104	2 911	3 873
Outer	14	2 091	5 029	3 641	14	3 714	630	3 371	4 056
Urban	32	1 429	5 403	2 727	47	3 142	1 148	2 731	3 552

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Costs by area of operation are for standard taxis only. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Administration costs

There are various approaches to taxi administration. Consequently, administration costs were disaggregated into three components in the survey:

- Own time (hours)
- Staff costs ($)
- Other businesses ($)

As the mix between these approaches to administration will vary across operators, these responses have been combined into a total cost for all respondents who gave estimate of all cost components (or stated they did not incur those cost components). The survey obtains the administration cost per operator rather than per taxi, and data was converted into figures per taxi in order to determine the average cost per taxi of administration.

Trimming of the distributions of survey data for administration costs was done in two parts. Firstly, for determining the average cost of components of administrative costs such as the cost of the operators own time, 5 per cent was trimmed from the tails of the distribution of responses. This trimming was on the per taxi cost so that respondents operating many taxis would not have their otherwise typical responses excluded because they operate many taxis.

Secondly, for determining the average total administrative cost, 5 per cent was trimmed from the tails of the distribution of total cost. Additionally only those operators who provided estimates (including $0) of their cost of all components of administrative cost were included. For example, respondents who reported estimates for their own time spent and staff costs but not costs for administrative services provided by other businesses were excluded from the sample because it is not clear whether no response indicates zero, or whether the operator has simply not answered the question. Similarly this trimming procedure was performed on the per taxi cost rather than cost per operator.

GST has been excluded from estimates of administration costs. This involves removing GST from reported 'Other businesses' expenses but not 'own time' or staff costs because no GST is paid on these components.

Table 6.8 presents our estimates of average administrative costs.

Table 6.9 illustrates the operators own time spent on administration in hours. The data was converted to a figure in dollars using an average administration wage of $27.90 per hour. This is based on an annual salary of $53 492[11] which is converted to an hourly figure.

11 Source: http://www.seek.com.au/jobs-resources/ accessed 23 January 2014.

6.8 Administration cost — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/taxi	$/taxi	$/taxi	No.	$/taxi	$/taxi	$/taxi	$/taxi
Per taxi									
Own time	258	0	15 453	4 346	943	3 461	7 312	2 545	4 377
Staff Costs	246	0	7 500	0	1 080	2 187	4 147	1 645	2 729
Other businesses	254	0	1 818	455	926	452	881	340	564
All types	**269**	**364**	**19 317**	**5 795**	**1 130**	**6 217**	**8 408**	**5 162**	**7 272**
All types				0					
Metro	217	364	19 317	5 525	1 037	6 090	8 980	4 836	7 344
Outer	15	2 628	18 930	5 795	22	7 447	5 962	4 429	10 464
All urban	36	1 676	18 885	7 244	70	7 795	4 640	6 187	9 403

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Estimates for cost by area are total cost including own time, staff costs and 'other businesses' expenses. Total costs are estimated for each survey respondent before the 5 per cent trim is applied. As each data set is trimmed separately, adding the survey averages for each cost will not equal the total reported in the table. Even if an operator did not provide estimates for all components of administrative cost their total administrative costs were taken to be the sum of cost components for which they did provide estimates. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

6.9 Own time per taxi estimates - administration

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	Hrs/week	Hrs/week	Hrs/week	No.	Hrs/week	Hrs/week	Hrs/week	Hrs/week
Own time per taxi	258	0	10.7	3	943	2.3	47.1	-3.4	8.1

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Repair and maintenance costs

As with administration costs, there are various approaches to repairs and maintenance. Repair and maintenance costs were disaggregated into three components in the survey — own time (hours), workshop costs ($) and payments to other businesses ($).

These responses have been combined into a total cost for all respondents who gave estimate of all cost components (or stated they did not incur those cost components). The survey obtains the repair cost per operator rather than per taxi, and data was converted into figures per taxi in order to determine the average cost per taxi of repairs.

As above, trimming of the distributions of survey data for repair costs was done in two parts. Firstly, for determining the average cost of components of repair costs such as the cost of the operators own time, 5 per cent was trimmed from the tails of the distribution of responses. This trimming was on the per taxi cost so that respondents operating many taxis would not have their otherwise typical responses excluded because they operate many taxis.

Secondly, for determining the average total repair cost, 5 per cent was trimmed from the tails of the distribution of total cost. Additionally only those operators who provided estimates (including $0) of their cost of all components of repair cost were included. For example, a respondent who gave estimates for their own time and workshop costs but not costs for repair services provided by other businesses would not be considered in determining average total cost. Similarly this trimming procedure was performed on the per taxi cost rather than cost per operator.

The trimmed mean (and medians) of the components sum to less than the trimmed mean (and median) of total repairs and maintenance costs. This reflects that operators tend to spend most of their costs in one of the categories — i.e. they have a workshop and minimal other costs, or pay other businesses. This means that the sum of the trimmed components will underestimate the total repairs and maintenance costs. We focus only on the total repairs and maintenance costs in the total reported cost.

GST has been excluded from estimates of repair costs. This involves removing GST from reported 'Other businesses' expenses but not 'own time' because no GST is paid on this component. While workshop costs include GST on parts used, this also includes staff costs and thus we have not reduced the reported amounts to exclude GST. Doing so would understate actual costs.

Table 6.10 presents our estimates of average repair costs.

Table 6.11 illustrates the operators own time spent on repairs in hours. We convert the data to a figure in dollars using an average repair wage of $32.10 per hour. This is based on an annual salary of $61 689[12] converted into an hourly figure.

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12 Source: My Careers website: http://content.mycareer.com.au/salarycentre/automotive/mechanical-trades/nsw, accessed 24 November 2011

6.10 Repair cost — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/taxi	$/taxi	$/taxi	No.	$/taxi	$/taxi	$/taxi	$/taxi
Per taxi									
Own time	259	0	12 519	1 669	936	1 030	4 123	515	1 545
Workshop	252	0	10 714	0	1 090	3 482	6 394	2 671	4 293
Other businesses	254	0	13 636	4 545	1 098	2 038	5 724	1 315	2 760
All types	**271**	**909**	**25 038**	**8 182**	**1 132**	**9 910**	**9 140**	**8 763**	**11 057**
All types									
Metro	220	909	25 038	7 277	1 040	9 864	9 660	8 512	11 217
Outer	15	3 942	21 371	10 886	22	11 028	6 453	7 762	14 294
All urban	36	1 591	24 266	9 896	70	10 229	6 814	7 904	12 554

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Estimates for cost by area are total cost including own time, workshop and 'other businesses' expenses. Total costs are estimated for each survey respondent before the 5 per cent trim is applied. As each data set is trimmed separately, adding the survey averages for each cost will not equal the total reported in the table. Even if an operator did not provide estimates for all components of repair cost their total repair costs were taken to be the sum of cost components for which they did provide estimates. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13.

6.11 Own time per taxi estimates – repairs and maintenance

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	Hrs/week	Hrs/week	Hrs/week	No.	Hrs/week	Hrs/week	Hrs/week	Hrs/week
Own time per taxi	259	0	50	1.0	936	0.9	4.9	0.3	1.5

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Assignment fees

We present assignment fees (licence lease costs) for different types of taxi including green-top taxis for which this presented the only distinguishing cost component. The survey does not distinguish green tops as a separate type of taxi for responses for other cost items given green top taxis may be standard, premium or WAT taxis. However assignment fees for green top taxis are priced differently as shown in Table 6.14.

The summary of assignment fees using alternative estimators is set out in table 6.12.

6.12 Assignment fees — standard metropolitan taxis

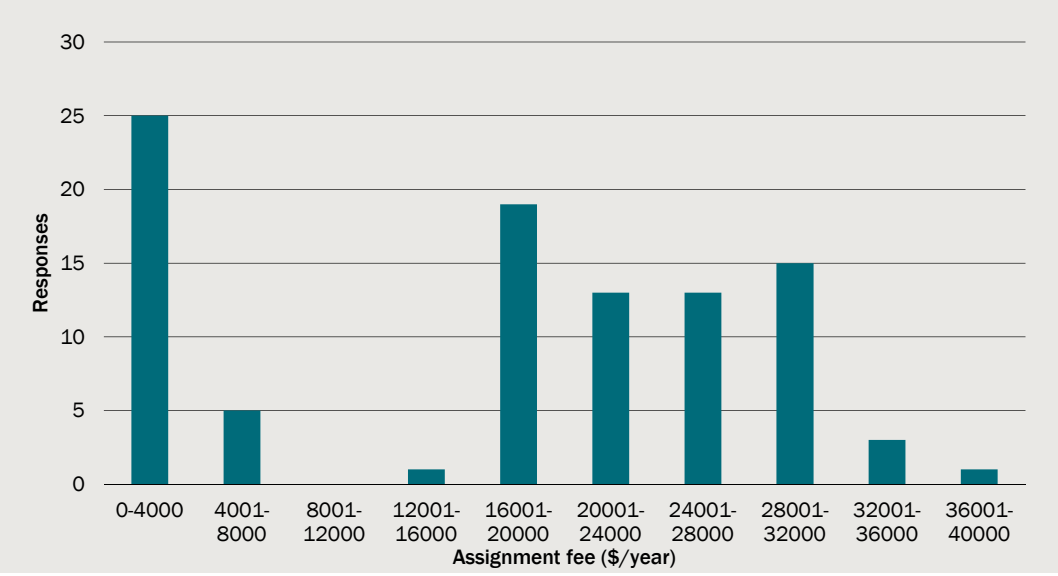
	Median	Mean	Weighted Mean
	$/year	$/year	$/year
Trimmed	na	24 699	25 732
Untrimmed	25 455	24 765	25 959

Note: This table presents estimates for standard taxis operating in the metropolitan area. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Note that we have made an adjustment to the responses from the survey for assignment fees. A large number of responses fell in the $2400-$2800 range. This suggested that the response had been given in cost per month, rather than per annum as the question asks for. These responses were therefore adjusted systematically to a per annum cost. A histogram of the original (unadjusted) assignment fees is shown in chart 6.13.

6.13 Frequency of responses to assignment fees



Note: This relates to lease costs for standard taxis only for illustration. Figures exclude GST.

Data source: The CIE analysis; ESC survey of taxi operators 2012/13

6.14 Assignment fee — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
Standard	91	16 364	31 200	25 200	664	25 624	8 699	23 753	27 496
Premium	5	6 182	30 000	28 364	5	24 364	13 565	12 473	36 254
WAT	20	24 000	28 364	26 157	51	26 321	981	25 868	26 775
Green Tops	36	5 805	6 818	6 364	36	6 379	190	6 313	6 445
Standard									
Metro	81	16 364	31 200	25 455	642	25 732	8 919	23 700	27 764
Outer	3	24 364	28 909	24 807	6	25 269	2 840	22 055	28 483
Urban	7	16 800	23 400	23 400	16	21 031	3 943	17 876	24 186

Note: This does not include the licence annual fee of $50.43 per taxi. Costs by area of operation are for standard taxis only. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Vehicle costs

We could estimate vehicle costs to operator through two methods. Firstly, the survey results provide a purchase price for vehicles where the operator has purchased their vehicle. Given the survey data indicating the age of vehicle at purchase and expected life of operation (years), the amount can be amortised and an annual cost determined. Secondly, some operators lease their vehicle and report a yearly cost of the lease.

We have used the first method of estimating vehicle costs believing it to produce a more reliable estimate. Respondents seemed to overstate the cost of leasing a vehicle reporting costs similar to the cost of leasing a licence. Some operators lease the vehicle and licence plate as part of a package, meaning that distinguishing between the licence and vehicle costs was difficult and therefore misreported in the survey. This would have upwardly biased the estimate of the vehicle lease cost. It is not possible to separate those responses that misunderstand the question because they may be a genuine report of the lease cost.

Thus the amortised cost of purchase is used to estimate vehicle costs. We obtain an annual lease payment by amortising these costs over the average life of a vehicle. To amortise, we use the Reserve Bank of Australia business indicator lending rate averaged over the past year (8.18 per cent)[13] which we adjust to a real interest rate using the midpoint of the Reserve Bank target inflation range (2.5 per cent). This is the same measure used in the taxi cost index report for IPART. We also allow for a vehicle to have a $700 residual value at the end of its usable life.

Table 6.15 presents the expected life of operation and average age at purchase of a taxi. All means shown are weighted means but only the expected life of operation has been trimmed. Trimming is not suitable for the age of purchase data because most responses are that the car is new when purchased. Therefore, trimming would not remove those responses but rather only extreme values at the high side of the distribution. This would bias the estimation of the average age of purchase, making the estimate less reliable.

13 Reserve Bank of Australia Table F5 Indicator Lending Rates for Business.

6.15 Expected life of operation and average age at purchase

	Taxis	Untrimmed, Weighted Mean	Trimmed, Weighted Mean
	No.	Years	Years
Standard + premium			
Life	989	4.7	4.5
Age	968	2.1	2. 0
Green top			
Life	50	5.3	5.6
Age	46	1.6	1.5
WAT			
Life	100	8.2	8.3
Age	103	2.5	2.3

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Purchase costs

Table 6.16 presents the estimated vehicle cost from survey data. We estimate total purchase cost using only responses that provide both vehicle purchase and fit-out costs. The weighted mean of total purchase costs is not equal to the sum of average vehicle purchase and fit-out costs. The reason for this is the trimming procedure used. 5 per cent has been trimmed off the ends of the distributions of purchase and fit-out data to determine the averages for those individual costs. However, to trim the data for determine average total cost of purchase, 5 per cent has been trimmed off the tails of the distribution of total cost for respondents who provided both vehicle purchase and fit-out cost estimates. This will mean that only outlying values of total cost are trimmed, so if purchase cost is high but fit-out cost is low, the response is not likely to be trimmed because the total purchase cost would not be in the outer 5 per cent of the distribution.

6.16 Vehicle purchase cost — detailed estimates

		Responses	Minimum	Maximum	Median	Amortised	Taxis	Weighted Mean	Amortised	Standard Deviation	Confidence interval	
											Lower bound	Upper bound
		No.	$	$	$	$/year	No.	$	$/year		$	$
Standard total		**148**	**20 909**	**40 909**	**28 636**	**6 989**	**775**	**26 023**	**6 521**	**9 299**	**24 449**	**27 598**
Purchase		188	14 955	36 364	24 545	5 971	824	20 770	5 176	10 373	19 215	22 325
Fit-out		148	909	9 455	4 545	996	775	5 001	1 140	5 301	4 110	5 892
WAT total		**30**	**50 000**	**77 727**	**69 091**	**10 691**	**87**	**68 609**	**10 539**	**8 677**	**65 273**	**71 944**
Purchase		43	27 273	76 364	47 273	7 293	103	47 783	7 319	19 417	41 766	53 800
Fit-out		30	2 727	27 273	18 636	2 833	87	16 852	2 537	12 748	11 952	21 753
Premium total		**37**	**31 364**	**68 182**	**36 818**	**9 024**	**64**	**38 789**	**9 787**	**10 158**	**35 323**	**42 254**
Purchase		39	23 182	50 000	31 818	7 781	68	32 259	8 116	8 465	29 454	35 063
Fit-out		37	1 818	9 091	6 000	1 358	64	6 137	1 431	2 202	5 386	6 889
Standard												
Metro	Total	109	20 909	40 909	29 091	7 102	719	25 780	6 458	10 194	23 761	27 798
Outer	Total	10	23 182	32 727	29 909	7 306	11	29 554	7 424	3 497	27 386	31 721
Urban	Total	29	22 273	40 909	27 727	6 763	45	28 955	7 271	5 595	26 804	31 106

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Costs by area of operation are for standard taxis only. Figures exclude GST. Trimmed estimates of amortised costs use trimmed estimates of expected usable life and untrimmed estimates of amortised costs use untrimmed estimates of expected usable life.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Table 6.17 compares estimates of purchase costs for standard taxis.

6.17 Purchase cost estimates — standard metropolitan taxis

	Median		Mean		Weighted mean	
	Once-off	Amortised	Once-off	Amortised	Once-off	Amortised
	$	$/year	$	$/year	$	$/year
Trimmed	na	na	29 499	7 410	25 780	6 458
Untrimmed	29 091	7 102	29 975	7 322	25 270	6 152

Note: This table presents estimates for standard taxis operating in the metropolitan area. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Vehicle lease costs

Table 6.18 presents estimates of vehicle lease costs.

6.18 Vehicle lease cost — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
Standard	42	6 048	32 727	10 385	299	15 764	29 656	6 335	25 193
Premium	13	7 636	11 818	10 385	40	10 355	982	9 775	10 935
WAT	13	7 727	30 000	20 182	46	17 001	12 561	9 895	24 108
All types	**68**	**6 048**	**32 727**	**10 385**	**385**	**15 329**			
Standard									
Metro	37	6 048	32 727	10 385	290	15 863	42 043	1 519	30 207
Outer	3	6 545	24 807	7 876	6	13 298	27 016	-17 273	43 869
Urban	2	6 545	20 800	6 545	3	11 297	na	na	na

Note: Estimates are based on a sample with 5 per cent trimmed off the ends of the distribution. Costs by area of operation are for standard taxis only. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Site and building costs

Survey responses indicate that 20.8 per cent of taxi operators pay building and site costs. Table 6.19 presents the typical cost per taxi of site and building costs. We calculate this using a weighted mean of cost because reported cost is not per taxi, but rather the operators' total costs for all taxis they operate. Therefore, responses from operators who operate many taxis will have a proportionally greater impact on the typical cost. The typical cost per taxi is the average cost per taxi accounting for the fact only 20.8 per cent of operators pay site and building costs.

6.19 Site and building costs estimate

	Building and site frequency	Typical cost per taxi
	Per cent	$/year
Trimmed	20.8	413
Untrimmed	20.8	402

Note: Sire and building costs are not differentiated between the type of taxi. Figures exclude GST.

Source: The CIE analysis; ESC survey of taxi operators 2012/13

Registration and the transport accident charge

Registration costs apply to all vehicles, and no differently to taxis. Taxis pay a registration cost of $238, including GST. Therefore, excluding GST, the cost is $216.36. This assumes that the taxi falls under the 12-month rate code VL, for a private, business use, or government vehicle with a weight not exceeding 4500kg.

In addition to this registration cost, taxi operators pay a compulsory Transport Accident Charge (TAC). The cost of the TAC is dependent on the classification of the vehicle and the postcode of the area in which the vehicle is garaged.

Postcodes are classified as high, medium or low risk. Most high-risk postcodes are in the inner city, while medium risk postcodes are generally in the outer suburbs and low risk postcodes are in the country. However, these are only the general areas of these risk categories, and it is not possible to conclude that a taxi operating in the metro area generally pay the high risk TAC, because the area of operation may be different from the area the car is garaged.

The cost of the TAC in the report is consistently $1650, which corresponds to the cost of a taxi garaged in a medium risk postcode. The high-risk postcode and low-risk postcode charges are $2202 and $1098 respectively. Costs for all risk areas include stamp duty and exclude GST.

Therefore, the total estimated cost of registration and TAC is $1866 (to nearest dollar).

Revenue from providing taxi services

Revenue from providing taxi services is presented in table 6.20.

6.20 Revenue — detailed estimates

	Responses	Minimum	Maximum	Median	Taxis	Weighted Mean	Standard Deviation	Confidence interval	
								Lower bound	Upper bound
	No.	$/year	$/year	$/year	No.	$/year	$/year	$/year	$/year
Standard/Premium	136	45 455	181 818	109 091	660	132 101	50 473	123 619	140 584
Green Tops	31	40 909	95 455	66 364	89	74 572	20 261	67 440	81 705
WAT	24	36 364	154 545	97 727	104	92 308	43 174	75 036	109 581
All types	**191**	**36 364**	**181 818**	**100 000**	**853**	**125 764**			
All types									
Metro	99	45 455	179 091		608	132 453	53 477	121 919	142 987
Outer	10	73 817	164 251		11	123 760	34 882	102 140	145 380
All urban	27	71 818	181 818		41	129 111	44 583	112 295	145 927

Note: Statistics based on trimmed (5 per cent) averages. Figures exclude GST.
Source: The CIE analysis; ESC survey of taxi operators 2012/13

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