



FINAL REPORT

Tasmanian taxi fare methodology inquiry

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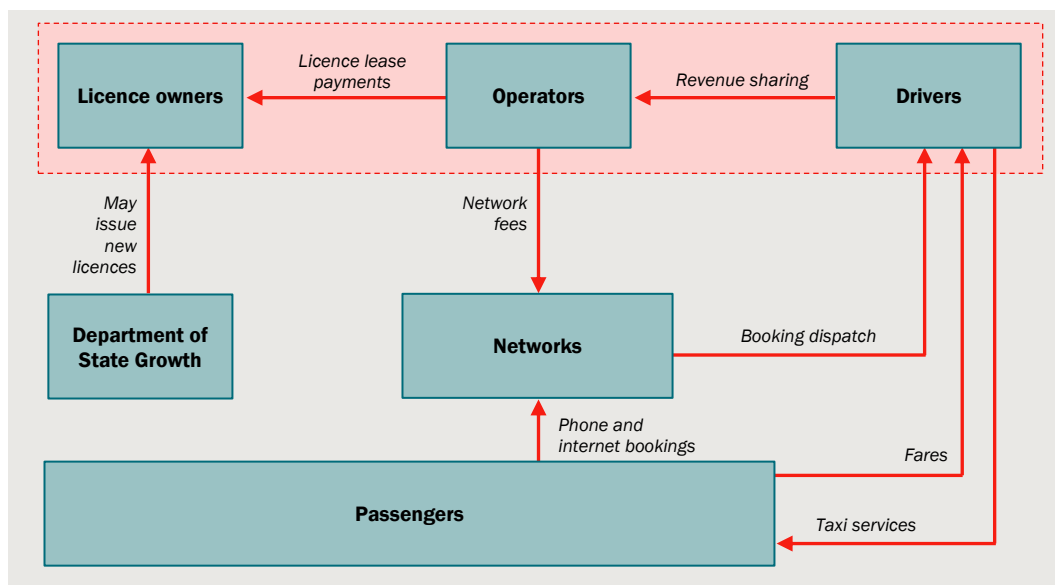
Summary

The Regulator has been directed to inquire into appropriate methodologies to set maximum fares and report to the Transport Commission. The Office of the Tasmanian Economic Regulator (OTTER) has engaged Centre for International Economics (CIE) to provide advice on the fare inquiry.

Overview of the Tasmanian taxi industry

The relationship between various participants in the taxi industry is summarised in chart 1. Passengers can procure a cab from taxi ranks or by hailing them down on the street. Alternatively, passengers can book a cab over the telephone or the internet. In some cases, the licence owner, the operator and the driver may be the same person. In other cases, they may be completely separate. Fare revenue is generally split between the operator and bailee drivers based on an agreed percentage (typically 50/50). In larger taxi areas, booking (and other) services are provided through taxi networks. In smaller taxi areas, bookings tend to be made directly with the operator.

1 The taxi industry



Data source: CIE.

The regulated maximum fares that apply in Tasmania are summarised in table 2. There are 3 separate fare areas. Urban fares are slightly higher than non-urban areas, although a significantly higher fare schedule applies to Flinders Island and King Island (although no taxis currently appear to be operating on either island).

2 Taxi fares in Tasmania

	Urban areas ^a	Other areas ^b	Flinders Island and King Island	Wheelchair accessible taxi
	\$	\$	\$	\$
Flag fall	3.90	3.90	5.30	5.30
Kilometre rate - tariff 1 (per Km) ^c	2.02	1.99	2.30	2.31 ^e
Kilometre rate - tariff 2 (per Km) ^d	2.42	2.39	2.76	2.76 ^f
Waiting time (per minute)	0.64	0.62	0.73	0.73

^a Applies in the following taxi areas: Hobart, Launceston, Devonport, Burnie, West Tamar, Ulverstone and Perth. ^b Applies in the following taxi areas: New Norfolk, Huon Valley, George Town, Circular Head, Break O' Day, Tasman, Dorset, Meander Valley, Penguin and West Coast. ^c Applies between 6:00 am and 8:00 pm on weekdays (except public holidays). ^d Applies between 8:00 pm and 6:00 am on weekdays and all day on weekends and public holidays. ^e Applies when at least one passenger in a wheelchair is travelling and there are less than 5 passengers. ^f Applies when at least one wheelchair passenger is travelling or when five or more passengers are traveling (at any time).

Source: Tasmanian Government website,

https://www.transport.tas.gov.au/public_transport/taxis_and_ride_sourcing/calculating_your_fare/accordion/taxi_tariffs_for_tasmanian_taxi_areas, accessed 8 October 2021.

Key recent developments in the Tasmanian taxi market include the following.

- Real fares fell by around 18 per cent from 2008 to 2020.
- Uptake of new licences has been mixed, with significant variations across taxi areas.
- Ridesourcing has emerged as a competitor to taxis in urban and some regional areas, with almost 1500 registered ridesourcing vehicles in Tasmania.
- There has been declining utilisation of taxis, with the number of registered vehicles falling from 620 licences in early 2018 to less than 550 in 2021, as well as anecdotal evidence that fewer taxis are 'double-shifted'.
- The COVID-19 pandemic has decreased demand, revenue and taxi utilisation. This is exemplified by the 60 per cent fall in airport visits (departures and arrivals).

Why regulate fares?

The key rationale for fare regulation differs between different types of trips, being relatively stronger for rank and hailed trips, but weak for pre-booked trips.

For hailed taxis, search costs are high because the time to wait until another taxi can be hailed and the uncertain prospect of whether it will be cheaper.

For taxis taken at a rank, there is a strong custom to take the next taxi in the queue, meaning that taxis do not effectively compete with others at a rank.

For most pre-booked trips the rationale for fare regulation is less clear, particularly in markets where there is a level of competition (including competition among networks or competition from ridesourcing).

How do taxi markets respond to fare changes?

To understand the impact of fare increases on outcomes for various participants in the taxi market, it is important to understand how the market adjusts to changes to these key policy settings (see table 3 for a summary of the likely long-run impacts).

Driver income and operator income are typically equal shares of taxi revenue. Although fare increases have tended to generate more revenue for the taxi industry in the past, it is less clear that they will continue to do so in the new environment. Increased competition from ridesourcing is likely to have made the demand for taxi services more responsive to price shifts, because ridesourcing is a relatively close substitute for taxis. It is therefore less likely that fare increases will result in more revenue for the taxi industry.

3 Long-run impact of increase in fares and licences

Outcomes for industry participants	Impact of a fare increase
Driver income	▪ Limited impact
Operator income	▪ Limited impact
Consumers outcomes	▪ Higher fares ▪ Improved waiting times (not in peak periods)
Licence value	▪ Increases in licence value (if demand is inelastic) ▪ Decreases in licence value (if demand is elastic)

Source: CIE analysis.

The long-run impact of a fare increase would be as follows.

- Any additional revenue would mostly be captured by licence owners.
- The fare increase would have limited impact on driver and operator incomes in the long run. Higher fares would tend to expand the industry, in terms of both costs and revenues.
- Consumers would pay higher fares; however, there could also be some benefit from lower waiting times.
 - A fare decrease would tend to be favourable for customers when there were already a lot of taxis available — customers could obtain reduced fares without impacting much on waiting times.
 - A fare increase would be favourable for customers when there were large waiting times for taxis.

There are a range of objectives that fare changes do not impact on.

- Fares do not have the impact of allowing for the costs of a taxi to be recovered, except where fares were too low to have a viable service at all.
 - where there are positive licence plate values, this indicates that the costs of providing taxi services and more are being recovered with existing fare levels
 - where licence plate values are close to zero, a change in fares will generally lead to costs expanding or contracting in the same direction (i.e. higher fares lead to higher costs and vice versa). Fare increases lead to more taxis entering the market

as they are operated for more time and more shifts or the reverse. Therefore, overall industry costs are responsive to the fares that are set, rather than fixed.

- Fares do not have the impact of increasing efficiency — for example, reductions in fares will not tend to encourage more efficient provision of services. In most taxi areas taxis are competing against one another, and already have incentives for cost reduction.

There are taxi areas within Tasmania where there are currently no taxi services. These are areas that are small and with limited demand. It is possible that a fare increase could make a service viable in these areas. This would be expected to be somewhat unlikely as the key factor affecting viability is the level of demand and the key drivers of taxi demand (such as population and population density) will not be affected by taxi fares. Higher fares would also reduce demand for taxis, so taxi services may not be viable in those areas at any price.

Options for a fare-setting methodology

Approaches to setting fares fall into two categories:

- cost index approaches, whereby changes in taxi fares are anchored to the change in total costs of providing a taxi service over time measured by the index, and
- approaches that seek to set fares in a way that balances supply and demand.

Importantly, the cost index approach is useful for making changes to fares over time, but it is insufficient by itself to determine whether the level of fares is appropriate.

An approach that aims to balance supply and demand would examine key aspects of the performance of the industry to form judgements about whether there was excess demand for taxi services or excess supply of services. If there are a lot of taxis available compared to demand, then this suggests fares should go down. On the other hand, if there are few taxis available relative to demand then this suggests fares should go up. This sort of approach lends itself better to understanding the direction of fares rather than the exact estimate of the increase or decrease.

Balancing supply and demand requires a different set of indicators than used for a cost index approach. It also tends to involve qualitative considerations and judgements, as much as the sort of pure quantitative information that can be used in estimating changes to costs.

Data on indicators of demand and supply are not readily available to the Tasmanian Government. Our discussions have indicated that no data is systematically collected on utilisation of taxis, time on the road or waiting times.

Recommended approach for setting fares

Regulated taxi fares should be formally reviewed (although not necessarily adjusted) regularly.

A fare review should consider the available evidence on whether the level of fares remains appropriate. Where cost indexes are mechanically applied (with no consideration of the level of fares), there is a risk that fares can move further away from the efficient level over time (as was observed in some Tasmanian taxi areas, as well as in other jurisdictions during the 2000s).

An assessment of whether fares are at an appropriate level, will depend on the objectives of fare regulation and the weight placed on different outcomes. However, the objectives of fare regulation are not clearly specified.

- If the objective of fare regulation is to move fares closer to efficient costs (which is generally the objective of fare regulation in other regulated industries), this implies reducing fares to a level where licence values are close to zero.
- However, if other factors (including waiting times for consumers and some consideration of whether reducing licence values to zero is fair on licence owners) are taken into account, the assessment of the current level of fares will be significantly different.

Based on the data available, we can make the following observations about the current level of fares in different taxi areas.

- The taxi industry in Hobart and Launceston appears to be operating well below capacity due to competition from ridesourcing and the temporary impacts of COVID-19. In a competitive market with low demand, raising fares risks losing further market share to ridesourcing.
- There appears to be less competition from ridesourcing in other urban markets (Devonport, Burnie, Ulverstone, Perth and West Tamar). However, the available evidence suggests that licences in these taxi areas retain some value, indicating scope to lower real fares over time.
- There are 6 taxi areas with no current licences (Glamorgan/Spring Bay North, Glamorgan/Spring Bay South, Kentish, Bruny Island, Central Highland and Flinders Island). Raising fares in these taxi areas would appear to have limited downside (as no services are currently provided), but could potentially allow a new provider to enter the market. One option would be to move all of these taxi areas onto the fare schedule that currently applies in Flinders Island and King Island.
- A further 7 taxi areas (Break O'Day, Dorset, Tasman, Meander Valley, Penguin, West Coast and King Island) have few current licences, with no taxis currently registered in 3 of these areas. Reducing fares in real terms could risk the viability of taxi services in these areas (either through: existing services becoming unviable; or unused licences remaining inactive).
- The remaining 4 taxi areas (New Norfolk, Huon Valley, George Town and Circular Head) appear to have some competition from ridesourcing and are currently operating below capacity (although this could partly reflect temporary COVID-19-related factors). Raising fares could exacerbate under-utilisation.

Where fares are assessed to have gotten out of alignment with what is considered to be an appropriate level, the level of fares may need to be reset. In these circumstances, we recommend that this transition occurs over time. In particular, real fares should be

decreased over time through the effects of inflation (i.e. keeping nominal fares constant). This is likely to remain the appropriate policy setting unless licence values increase substantially.

An alternative more formal approach that would achieve broadly similar outcomes over time would involve applying a deflator to the licence lease component of the Taxi cost index to transition to a more appropriate fare level.

1 *Background and introduction*

Background

The Regulator has been directed to inquire into appropriate methodologies to set maximum fares and report to the Transport Commission. In undertaking the inquiry, the Regulator is required to consider the following fare-related issues:

- methods for setting maximum fares
- methods of calculating maximum annual increases in fares
- the relative weighting of fare-related components, and
- any other matters relating to the matters listed above fares which are raised during the course of the inquiry.

The Office of the Tasmanian Economic Regulator (OTTER) has engaged Centre for International Economics (CIE) to provide advice on the fare inquiry.

Terms of Reference

The Terms of Reference require the Regulator to consider the matters set out in box 1.1.¹

1.1 Matters to be considered by the Regulator

- In conducting the inquiry, the Regulator must consider the following matters:
- the efficient cost of providing taxi services
- the need for greater efficiency in the supply of taxi services so as to reduce costs for the benefit of consumers and taxpayers
- the protection of consumers from abuses of monopoly or cartel power in relation to prices and standards of service
- the social impact of the setting of taxi fares in accordance with the results of the Inquiry
- the effect, of the setting of taxi fares in accordance with the results of the Inquiry, on the use of taxis and other modes of passenger transport
- standards of quality, reliability and safety in relation to taxis, whether those standards are set by legislation, agreement or otherwise

¹ See: Office of the Tasmanian Economic Regulator website, <https://www.economicregulator.tas.gov.au/>, accessed 5 October 2021.

- the degree to which the structure of taxi fares, set in accordance with the results of the Inquiry, is comprehensible to passengers and operators of taxi services
- ensuring taxi fares are not discriminatory between classes of consumers and classes of operators of taxi services
- any other matter set out in this direction in relation to the scope of the inquiry, and
- any other matter that the Regulator considers relevant.

The Regulator's Terms of Reference also explicitly require it to consider the Tasmanian Government's policy commitments as part of the reforms to accommodate ridesourcing (see table 1.2).

1.2 Tasmanian Government policy commitments

Tasmanian Government commitments	
General	<ul style="list-style-type: none"> ▪ The ability for taxis to undertake multiple hires (that is passengers who are not associated share a journey in the same general direction) is to be introduced; ▪ The regulated fare structure for wheelchair accessible taxis is to be made consistent with standard fares (to address existing potential fare discrimination issues); ▪ The way fares are charged is to be changed so that the meter is activated when the passenger presents for boarding (to take into account loading time for WATs, passenger luggage etc); ▪ A review is to be undertaken to ensure that all efficient costs are transparently identified and factored into the regulated tariff, and ▪ The annual taxi licence fee will be removed, but a new limited accreditation fee will be introduced.
Operators and Booking Service Providers	<ul style="list-style-type: none"> ▪ Booking service providers are now to be regulated as operators to account for taxi networks/dispatch services; ▪ An accreditation of operators requiring them to meet certain standards and have systems in place to ensure legislative compliance is to be introduced; ▪ Operators are to be responsible for relevant driver training and competence; ▪ There is not to be any compulsory affiliation of taxi operators to radio rooms/dispatch networks, and; ▪ Annual fees are to be applied fairly across the industry (including booking service providers).
Vehicles	<ul style="list-style-type: none"> ▪ There are not to be any aesthetic or comfort based standards introduced; ▪ The requirement that Wheelchair Accessible Taxis be brand new when initially authorised to perform a public passenger vehicle service in particular taxi areas is to be removed; ▪ There is to be an annual inspection for vehicles under 10 years of age and six-monthly inspections for vehicles over 10 years. Existing inspection arrangements for new vehicles are to remain in place; ▪ Vehicles newly entering the market (date stamped within seven years) are to have a 5- star Australasian New Car Assessment Program (ANCAP) or equivalent rating – exceptions can be made by the Transport Commission, and; ▪ There is a requirement for Wheelchair Accessible Taxis to meet minimum safety standards and the Disability Standards for Accessible Public Transport 2002 (as opposed to an ANCAP ratings for these vehicles)
Drivers	<ul style="list-style-type: none"> ▪ There will be an ongoing evolution of driver authorisation and renewal processes which reflect the activity and risk profile of the service being provided; ▪ There will be a phased-in and risk-based approach to medical declarations based on evidence. There will be compulsory annual medicals for drivers over 65;

Tasmanian Government commitments	
	<ul style="list-style-type: none"> ▪ There is to be an annual training self-declaration process for all drivers which covers legislative obligations, requirements of disability and anti-discrimination legislation and driver behaviours; ▪ There are to be no mandatory training requirements for an Ancillary Certificate. This involves removing compulsory driver training from the driver authorisation process. Under this model, the operator would be responsible for ensuring that their driver is appropriately trained to operate the vehicles they are using and the service they are providing. Where a taxi operator has Wheelchair Accessible Taxis, all of its drivers must be trained in how to meet the needs of a wheelchair-reliant passenger and to operate the vehicle specific systems, and; ▪ Driver identification, including ancillary certificate number, must be available to passengers, either displayed in the vehicle or made electronically available to the passenger.
Compliance and enforcement	<ul style="list-style-type: none"> ▪ Complaints that are not criminal in nature will continue to be directed to taxi operators/booking service providers in the first instance. If consumers remain dissatisfied, they can refer to Transport Commission or Registrar of Motor Vehicles; ▪ A chain of accountability model will be introduced. Under this model, all parties who have control or influence over the point-to-point transport sector share responsibility for compliance and have a primary duty of care to deliver safe services; ▪ Industry will be expected to manage how to meet its obligations. The Department of State Growth will continue to require systems audits of operators to ensure compliance; ▪ A reportable incident scheme for operators and drivers will be established, and; ▪ Options to deal with non-compliance will be introduced, including: warning, improvement notices, infringement notices, probation, suspension, cancellation, require additional audits or variation of conditions of accreditation, and a requirement to provide the Transport Commission with evidence and information.

Source: OTTER website.

<https://www.economicregulator.tas.gov.au/Documents/2021%20Taxi%20Fare%20Methodology%20Inquiry%20-%20Terms%20of%20Reference.PDF>, accessed 30 July 2021.

This report

This report provides advice to the Regulator on approaches to setting taxi fares in Tasmania. The remainder of this report is set out as follows.

- Chapter 2 provides an overview of the Tasmanian taxi industry
- Chapter 3 sets out a conceptual framework for setting taxi fares
- Chapter 4 reviews the current fare setting arrangements in Tasmania
- Chapter 5 sets out some options for setting taxi fares in the future
- Chapter 6 sets out some recommendations.

2 Overview of the Tasmanian taxi industry

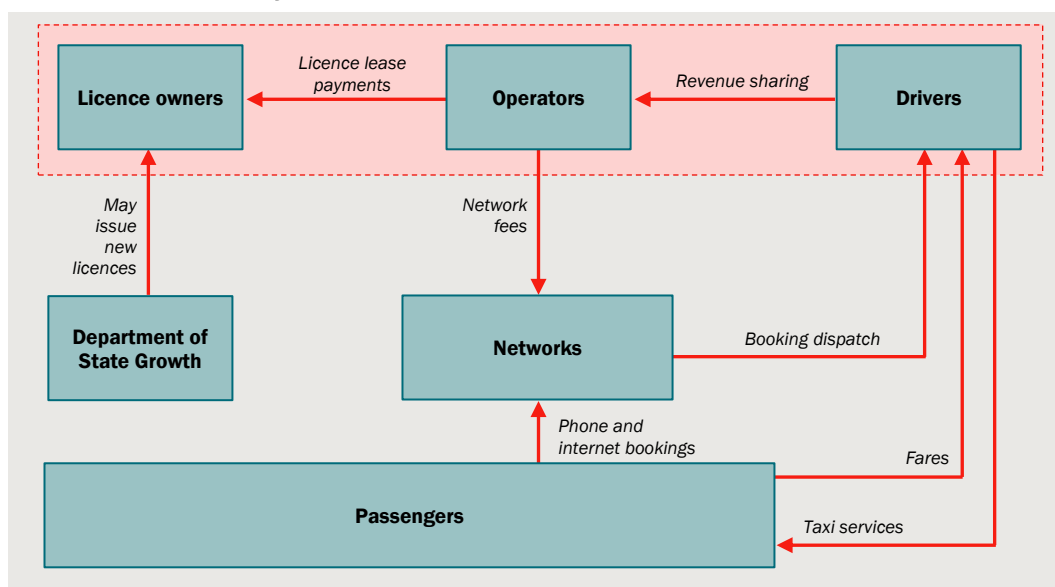
The taxi industry in Tasmania

The relationship between various participants in the taxi industry is summarised in chart 2.1.

- Passengers can procure a cab from taxi ranks or by hailing them down on the street. Alternatively, passengers can book a cab over the telephone or the internet.
- The arrangements for supplying taxi services can vary considerably. In some cases, the licence owner, the operator and the driver may be the same person. In other cases they may be completely separate.
 - Licence owners can either operate a taxi themselves or lease the licence to a separate operator, depending on the type of licence.
 - Operators must own or lease a licence to be able to operate a taxi. Operators are also responsible for various costs associated with operating a taxi, including: fuel, purchasing or leasing the vehicle, vehicle maintenance, insurance and network fees. Operators can drive the taxi themselves or obtain a bailee driver (or both).
 - In Tasmania, fare revenue is generally split between the operator and bailee drivers based on an agreed percentage (which may vary across different taxi areas). These arrangements are not regulated.²
- Booking arrangements vary across different taxi areas.
 - In larger taxi areas, booking (and other) services are provided through taxi networks. Operators can choose to be a member of a taxi network that provides booking (and some other services). These networks dispatch phone and internet bookings to all affiliated taxis and each driver can decide whether to accept the booking.
 - In smaller taxi areas, bookings tend to be made directly with the operator (who may operate all of the taxis in a particular taxi area).

² Department of Infrastructure, Energy and Resources, 2006, Review of the Taxi and Luxury Hire Car Industries Act 1995, *Paper 2 – Taxi Fare Setting Mechanisms and Driver Pay Conditions*, p. 53.

2.1 The taxi industry



Data source: CIE.

Regulatory arrangements

Key distinguishing features of the Tasmanian taxi industry (as well as taxi industries in many other jurisdictions) include:

- licensing requirements — taxi operators must hold a licence issued by the Department of State Growth; and
- regulated fares — maximum fares are regulated in Tasmania.

Licensing arrangements

Taxi licences apply to specific taxi areas, of which there are 24 in Tasmania. There are four different types of licences:³

- Perpetual taxi licences (PTLs) — there are no restrictions on who may own a PTL. As such, they may be: owned by an investor and leased to an accredited operator or owned by the operator themselves. However, no new PTLs can be issued.
- Owner-operator taxi licences (OOTLs) — OOTLs were introduced in 2008. The owners of OOTLs must be the operators of the taxi business (though not necessarily the taxi driver). OOTLs cannot be leased but may be traded, but only to an accredited individual and with the approval of the Transport Commission. The arrangements for issuing new OOTLs are set out below.
- Wheelchair-accessible taxi (WAT) licences — WAT licences were introduced in 2005. WAT licence numbers are uncapped and there is no licence price. WATs may only be

³ Office of the Tasmanian Economic Regulator, *Investigation into the Reserve Prices of Owner-Operator Taxi Licences: 1 December 2021 to 31 December 2025*, Issues Paper, pp. 10-11.

operated by the accredited operator that also holds the licence. WAT licences apply for a fixed period (10 years).

- Temporary taxi licences (TTL) — a TTL is similar to an OOTL, but is issued for a short term period only, at the discretion of the Transport Commission. Currently, there are no active TTLs in any taxi area.

Number of taxi licences

The number of each of these licences on issue by taxi area (as at 9 September 2021) is shown in table 2.2.

2.2 Number of licences

	Owner Operator Taxi Licences		Perpetual Taxi Licences		Wheelchair Accessible Taxi Licences	
	Current	Lapsed	Current	Lapsed	Current	Lapsed
	No.	No.	No.	No.	No.	No.
Hobart	89	0	228	0	41	0
Launceston	3	0	101	0	14	1
Burnie	0	0	21	1	0	0
Devonport	6	0	23	0	11	0
Ulverstone	2	0	7	0	2	0
George Town	0	0	5	0	0	0
Perth	5	0	8	0	0	0
West Tamar	0	0	2	0	0	0
Meander Valley	0	0	2	0	0	0
Circular Head	0	0	5	0	0	0
Break O'Day	0	0	3	0	0	0
New Norfolk	0	0	9	0	0	0
Huon Valley	3	0	5	0	0	1
Glamorgan/Spring Bay North	0	0	0	2	0	0
Kentish	0	0	0	0	0	0
Penguin	0	0	2	0	0	0
Tasman	1	0	2	1	0	0
Dorset	0	0	3	0	0	0
Glamorgan/Spring Bay South	0	0	0	3	0	0
Bruny Island	0	0	0	2	0	0

	Owner Operator Taxi Licences		Perpetual Taxi Licences		Wheelchair Accessible Taxi Licences	
	Current	Lapsed	Current	Lapsed	Current	Lapsed
	No.	No.	No.	No.	No.	No.
Central Highlands	0	0	0	0	0	0
Flinders Island	0	1	0	1	0	0
King Island	0	0	1	0	0	0
West Coast	0	0	2	7	0	0
Total	109	1	428	17	68	2

Source: Office of the Tasmanian Economic Regulator, *Investigation into the Reserve Prices of Owner-Operator Taxi Licences: 1 December 2021 to 31 December 2025*, Draft Report, p. 5.

Arrangements for issuing new OOTLs

The standard arrangements for issuing new OOTLs are as follows.

- By 30 September each year and for each taxi area, the Transport Commission must make available the number of OOTLs that is equal to 5 per cent of the total number of PTLs and OOTLs in that area (rounded to the nearest whole number), or one OOTL, whichever is greater.
- These OOTLs are issued through a tender process. A reserve price specified for each taxi area, although the sale price may be above the reserve price.
- If the average tender price in a taxi area is more than double the reserve price, the Commission must make available a further 5 per cent of the total number of PTLs and OOTLs, or an additional single OOTL, whichever is greater.
- Any OOTLs that are not sold through this process remain available for sale for the rest of the year at the reserve price.

The standard release process for OOTLs did not proceed in 2016 and 2017 (and in 2018 for the Hobart taxi area) when ride-sourcing was first authorised in Tasmania.

Furthermore, under recent amendments to the Act, no OOTLs can be released until 2025, unless the Transport Commission is satisfied that there are insufficient taxis available in any taxi area to meet the needs of consumers. If the Commission is satisfied there are insufficient taxis available, the OOTLs would be made available by tender at the reserve price, as set by the Regulator.

The previous reserve price (that applied until 2020) and the Regulator's final determination over the period from 1 December 2021 to 1 January 2025 is shown in table 2.3.

2.3 OOTL reserve price by taxi area

	Previous reserve price ¹		Final determination			
	1-Dec-21	1-Dec-21	1-Jan-22	1-Jan-23	1-Jan-24	1-Jan-25
	\$	\$	\$	\$	\$	\$
Hobart	60 000	57 000	54 200	51 500	48 900	46 500
Launceston	35 000	31 500	28 400	25 600	23 100	20 800

	Previous reserve price ^a	Final determination				
		1-Dec-21	1-Jan-22	1-Jan-23	1-Jan-24	1-Jan-25
	\$	\$	\$	\$	\$	\$
Burnie	23 000	20 700	18 700	16 900	15 300	13 800
Devonport	23 000	23 000	23 000	23 000	23 000	23 000
Ulverstone	17 250	16 400	15 600	14 800	14 100	13 400
George Town	12 500	11 300	10 200	9 200	8 300	7 500
Perth	12 500	12 500	12 500	12 500	12 500	12 500
West Tamar	12 500	11 300	10 200	9 200	8 300	7 500
Meander Valley	12 500	11 300	10 200	9 200	8 300	7 500
Circular Head	11 250	10 200	9 200	8 300	7 500	6 800
Break O'Day	10 800	9 800	8 900	8 100	7 300	6 600
New Norfolk	10 800	9 800	8 900	8 100	7 300	6 600
Huon Valley	7 500	6 800	6 200	5 600	5 100	4 600
Glamorgan/ Spring Bay North	3 750	3 400	3 100	2 800	2 600	2 400
Kentish	3 750	3 400	3 100	2 800	2 600	2 400
Penguin	3 750	3 750	3 750	3 750	3 750	3 750
Tasman	3 750	3 400	3 100	2 800	2 600	2 400
Dorset	2 250	2 250	2 250	2 250	2 250	2 250
Glamorgan/ Spring Bay South	1 875	1 700	1 550	1 400	1 300	1 200
Bruny Island	1 000	900	810	730	660	600
Central Highlands	1 000	900	810	730	660	600
Flinders Island	1 000	900	810	730	660	600
King Island	1 000	900	810	730	660	600
West Coast	1 000	1 000	1 000	1 000	1 000	1 000

^a Applied until 2020.

Source: Office of the Tasmanian Economic Regulator, *Investigation into the Reserve Prices of Owner-Operator Taxi Licences: 1 December 2021 to 31 December 2025*, Final Report and Price Determination, November 2021, pp. iv-vii.

Wheelchair accessible taxis

There are currently 68 WAT licences operating across 4 taxi areas: Hobart, Launceston, Devonport and Ulverstone (table 2.4). WATs also previously operated in Burnie and Huon Valley, although these licences have been cancelled, suspended or lapsed.

The number of WAT licences have increased by around 40 per cent since 2009, with most new WAT licences in Hobart or Devonport.

Around 66 per cent of Tasmania's population live in these taxi areas, leaving around 34 per cent of Tasmania's population unserved by WATs.

2.4 Number of WAT licences

	2009	Current	Change
	No.	No.	No.
Burnie	1	0	-1
Devonport	1	11	10

	2009	Current	Change
	No.	No.	No.
Hobart	31	41	10
Huon Valley	1	0	-1
Launceston	14	14	0
Ulverstone	0	2	2
Total	48	68	20

Source: Data provided by OTTER, CIE.

Fares

The regulated maximum fares that apply in Tasmania are summarised in table 2.5. There are 3 separate fare areas.

- Urban fares apply in: Hobart, Launceston, Devonport, Burnie, West Tamar, Ulverstone and Perth. These taxi areas cover around 82 per cent of Tasmania's population.
- Slightly lower fares apply in most other taxi areas (New Norfolk, Huon Valley, George Town, Circular Head, Break O'Day, Tasman, Dorset, Meander Valley, Penguin and West Coast).
- A significantly higher fare schedule applies to Flinders Island and King Island, although there does not appear to be any taxis currently operating in these markets.
 - There are no current licences for Flinders Island.
 - Although there is 1 current licence for King Island, there are no registered taxis with a garage address on King Island.

2.5 Taxi fares in Tasmania

	Urban areas ^a	Other areas ^b	Flinders Island and King Island	Wheelchair accessible taxi
	\$	\$	\$	\$
Flag fall	3.90	3.90	5.30	5.30
Kilometre rate – tariff 1 (per Km) ^c	2.02	1.99	2.30	2.31 ^e
Kilometre rate – tariff 2 (per Km) ^d	2.42	2.39	2.76	2.76 ^f
Waiting time (per minute)	0.64	0.62	0.73	0.73

^a Applies in the following taxi areas: Hobart, Launceston, Devonport, Burnie, West Tamar, Ulverstone and Perth. ^b Applies in the following taxi areas: New Norfolk, Huon Valley, George Town, Circular Head, Break O'Day, Tasman, Dorset, Meander Valley, Penguin and West Coast. ^c Applies between 6:00 am and 8:00 pm on weekdays (except public holidays). ^d Applies between 8:00 pm and 6:00 am on weekdays and all day on weekends and public holidays. ^e Applies when at least one passenger in a wheelchair is travelling and there are less than 5 passengers. ^f Applies when at least one wheelchair passenger is travelling or when five or more passengers are traveling (at any time).

Source: Tasmanian Government website,

https://www.transport.tas.gov.au/public_transport/taxis_and_ride_sourcing/calculating_your_fare/accordion/taxi_tariffs_for_tasmanian_taxi_areas, accessed 8 October 2021.

Fares were recently increased by around 5 per cent, although for many passengers this would have been offset by a 5 percentage point reduction in the credit card surcharge (from 10 per cent to 5 per cent). This was the first fare increase in 7 years.

Recent developments in the Tasmanian taxi market

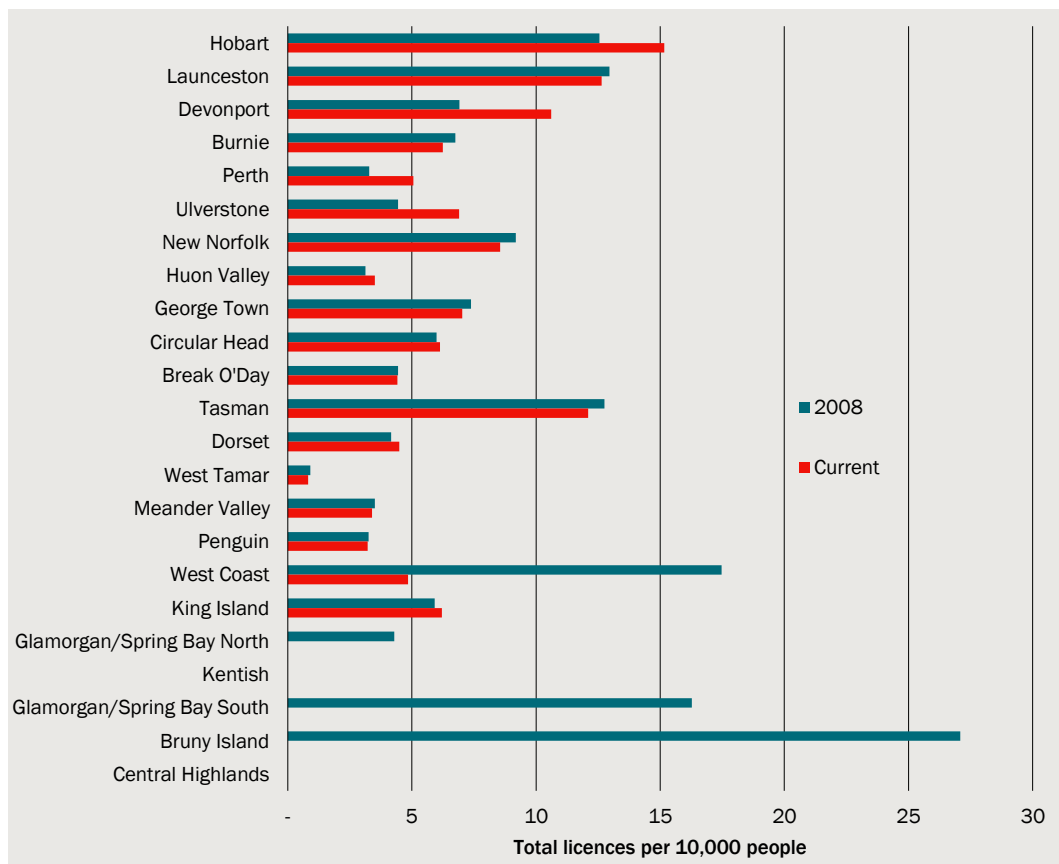
There have been some significant developments in the Tasmanian taxi market over recent years. Key developments and their impacts on the Tasmanian taxi market are discussed below.

Uptake of new licences

The uptake of new licences and population growth has varied across taxi areas. Chart 2.6 compares the total number of taxi licences (including perpetual taxi licences, OOTLs and WAT licences) per unit of population in each taxi area in 2008 to 2021. Key observations are as follows.

- There has been a significant increase in the number of taxi licences per person in Hobart over this period, despite relatively strong population growth.
- The number of taxi licences per unit of population has also increased in those taxi areas where there has been uptake of new licences (including Devonport, Perth and Ulverstone)
- By contrast, the number of licences per unit of population has fallen in Launceston, Burnie and several other taxi areas.

2.6 Taxi licences per unit of population



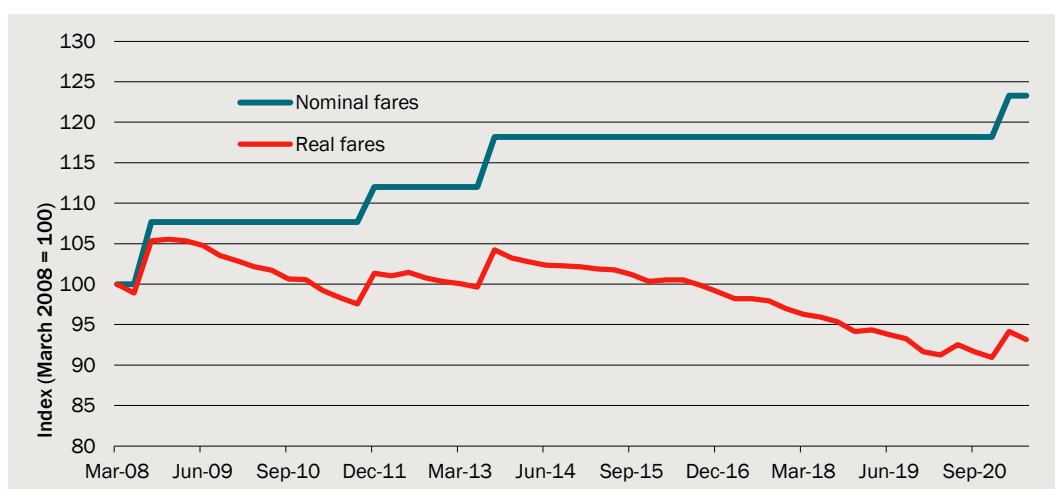
Data source: Data provided by OTTER, ABS, CIE.

Decline in real fares

Since 2008, taxi fares have been increased only 3 times (chart 2.7):

- Fare increases in October 2011 and January 2014 kept real fares broadly in line with 2008 levels.
- However, during the 7-year period of stable nominal fares, real fares declined by around 11 per cent.
- Despite the recent (February 2021) increase in nominal fares, real taxi fares remain around 9 per cent below 2008 levels.

2.7 Taxi fares in Tasmania



Data source: ABS, CIE.

The emergence of ridesourcing

A key recent development in taxi markets across the world — including the larger taxi markets in Tasmania — has been the entry of ridesourcing. Key features of the ridesourcing model (i.e. differences to the standard taxi model) include the following:

- Passengers and drivers are connected via a smartphone app.
- The smartphone app provider may apply dynamic pricing based on an algorithm that takes into account the supply and demand for services at any particular time:
 - in non-peak times, the price of ridesourcing services tends to be significant lower than traditional taxi services (20 to 30 per cent), and
 - during peak times (where demand for ridesourcing services may exceed supply at normal prices), surge prices may apply.
- Drivers use their own vehicle.
- The app provider takes a set proportion of fares.

Along with other Australian jurisdictions, the Tasmanian Government has amended the regulatory framework for on-demand transport to accommodate ridesourcing.

- Ridesourcing providers are able to compete in the market for booked services, but taxis retain sole access to the rank and hail market. That said, given the ease of

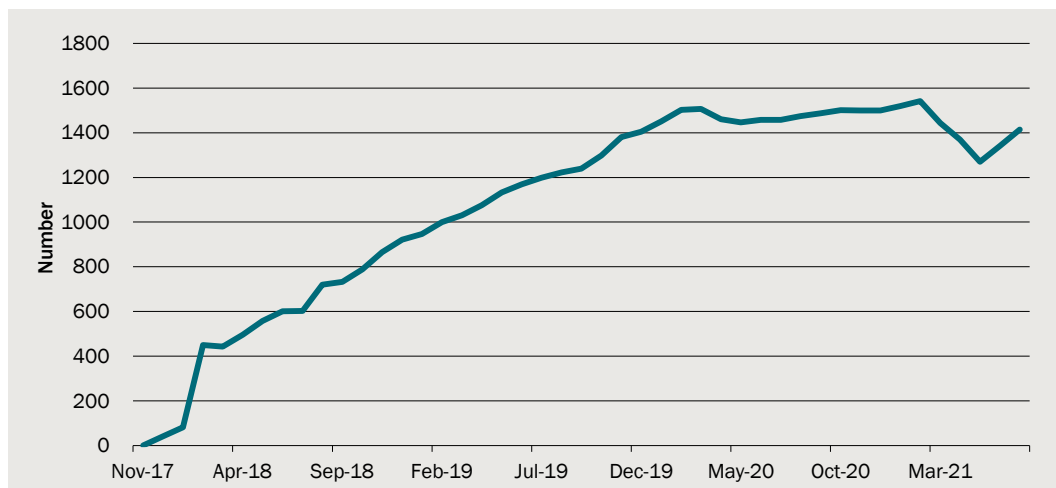
booking ridesourcing services via smartphone apps and a level of certainty around waiting times, ridesourcing services are likely to compete against traditional rank and hail taxi services, as well as booked taxi services.

- Although there are some (generally safety-related) regulations that also apply to ridesourcing, there is open entry into the market and prices are not regulated.

As vehicles used for ridesourcing must be registered accordingly, there is data available on the number of registered ridesourcing vehicles in Tasmania. However, it is not clear to what extent these vehicles are actually used to provide ridesourcing services.

The number of registered ridesourcing vehicles increased rapidly from late 2017 to around 1500 licences in March 2020 (chart 2.9). The number registered ridesourcing vehicles then remained broadly steady for the next year as the COVID-19 pandemic began to affect demand before falling from around February 2021.

2.8 Registered ridesourcing vehicles



Data source: Data provided by OTTER.

The garage address of registered ridesourcing vehicles is also recorded (table 2.9). However, this is an imperfect indicator of the taxi area in which the vehicle operates (note that ridesourcing vehicles are not restricted in the area in which they can operate). Most registered ridesourcing vehicles are registered in Hobart and Launceston.

2.9 Number of registered ridesourcing vehicles by taxi area

Taxi area	Registered ridesourcing vehicles
	No.
Hobart	1 087
Launceston	308
Devonport	15
New Norfolk	9
Burnie	8
Circular Head	8

Taxi area	Registered ridesourcing vehicles
	No.
Huon Valley	7
Meander Valley	5
Central Highlands	4
Dorset	4
Perth	4
Break O'Day	2
Kentish	2
Glamorgan/Spring Bay South	1
Penguin	1
Tasman	1
Ulverstone	1
Total	1 467

Source: Data provided by OTTER.

Reduced demand due to COVID pandemic

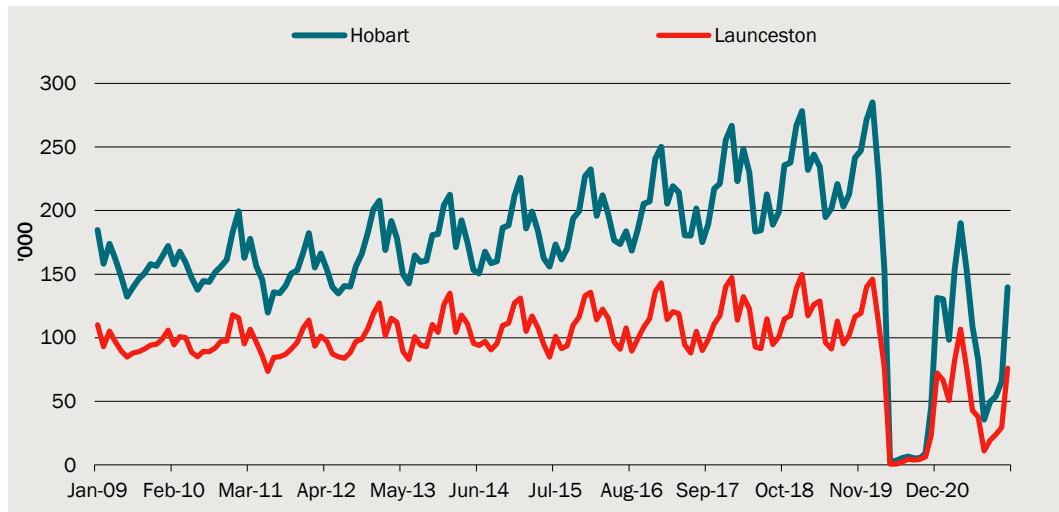
The COVID pandemic has also had a significant impact on the Tasmanian taxi market. Although Tasmania had few COVID cases throughout most of 2020 and 2021, COVID-related travel restrictions have had a significant impact on demand for taxi services in some taxi areas.

In particular, there has been reduced demand for airport trips in Hobart and Launceston, where airport work had previously made up a significant share of taxi trips. In 2020-21, the number of passengers arriving and departing both Hobart and Launceston airports was more than 60 per cent lower than in 2018-19 (chart 2.10).

- Passenger numbers began to recover in early 2021, but subsequently fell away due to the Delta outbreak in NSW and Victoria.
- As at December 2021, passenger numbers appear to be recovering as travel restrictions have been lifted, but remain well below pre-pandemic levels.

There is also likely to have been less demand from tourists more generally (although this may have been partly offset by fewer Tasmanians holidaying outside of Tasmania).

2.10 Airport passengers – monthly



Note: Data refer to airline passengers.

Data source: Bureau of Infrastructure and Transport Research Economics,
https://www.bitre.gov.au/publications/ongoing/airport_traffic_data, accessed 22 February 2022.

Registered taxi vehicles

Although the total number of taxi licences has been increasing over time, not all licences are currently in use. As the vehicles used to provide taxi (and hire car) services must be registered, comparing the number of vehicles registered as taxis and hire cars with the total number of licences provides an indicator of whether licences are in use.

- There are currently 605 taxi licences in total and 22 hire car licences.
- Over the period from 2015 to mid-2019, it appears that nearly all taxi and hire car licences were in use (over this period, there were on average around 620 registered taxi and hire car vehicles) (chart 2.11).
- The number of registered taxi and hire car vehicles has subsequently declined to around 550, suggesting around 13 per cent of licences are not currently in use. This decline coincided with the emergence of ridesourcing and more recently, the COVID-19 pandemic.

2.11 Number of registered taxi and hire car vehicles



Data source: Data provided by OTTER.

Table 2.12 compares the number of licences with the number of registered taxis with a garage address within each taxi area. As for ridesourcing vehicles, the garage address is an imperfect indicator of the area in which a taxi operates (see above). Nevertheless, this information suggests that many of the licences that are currently unused are in Hobart and Devonport.

2.12 Number of licences vs registered taxis

	Standard taxis			WATs		
	Licences	Registered taxis	Difference	Licences	Registered taxis	Difference
	No.	No.	No.	No.	No.	No.
Hobart	317	290	-27	41	25	-16
Launceston/West Tamar/Perth ^a	119	113	-6	14	24	10
Burnie	21	18	-3	0	0	0
Devonport	29	6	-23	11	6	-5
Ulverstone	9	9	0	2	3	1
George Town	5	6	1	0	0	0
Meander Valley	2	7	5	0	0	0
Circular Head	5	6	1	0	0	0
Break O'Day	3	2	-1	0	0	0
New Norfolk	9	0	-9	0	0	0
Huon Valley	8	2	-6	0	0	0
Glamorgan/Spring Bay North	0	0	0	0	0	0
Kentish	0	0	0	0	0	0
Penguin	2	2	0	0	0	0
Tasman	3	3	0	0	0	0
Dorset	3	0	-3	0	0	0
Glamorgan/Spring Bay South	0	0	0	0	0	0
Bruny Island	0	0	0	0	0	0

	Standard taxis			WATs		
	Licences	Registered taxis	Difference	Licences	Registered taxis	Difference
	No.	No.	No.	No.	No.	No.
Central Highlands	0	0	0	0	0	0
Flinders Island	0	0	0	0	0	0
King Island	1	0	-1	0	0	0
West Coast	2	2	0	0	0	0
Total	538	466	-72	68	58	-10

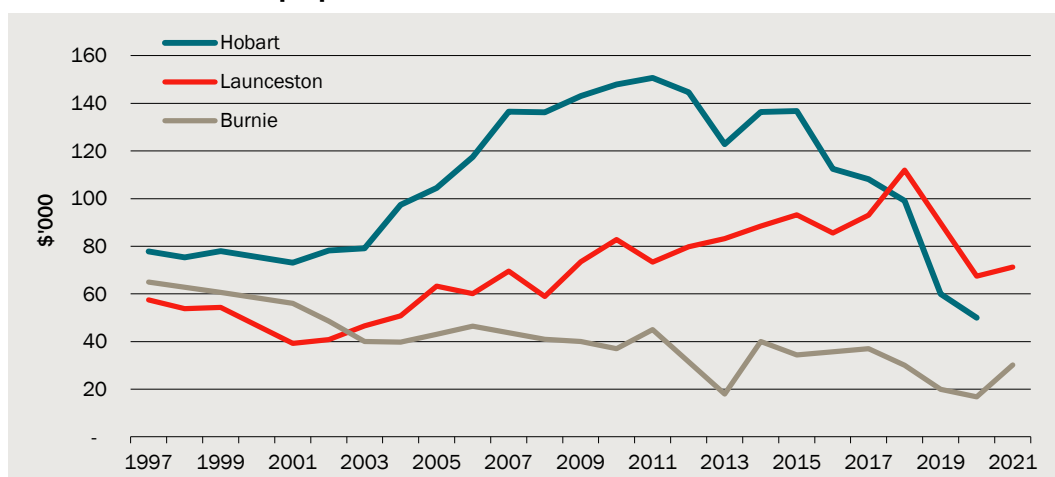
^a As the Launceston taxi areas overlaps with both West Tamar and Perth taxi areas, these taxis areas have been combined in the table.

Source: Data provided by OTTER.

Licence values

There are only 3 taxi areas where there have been sufficient licence trades to get an indication of the trend in licence prices: Hobart, Launceston and Burnie (chart 2.13).

2.13 Traded value of perpetual taxi licences

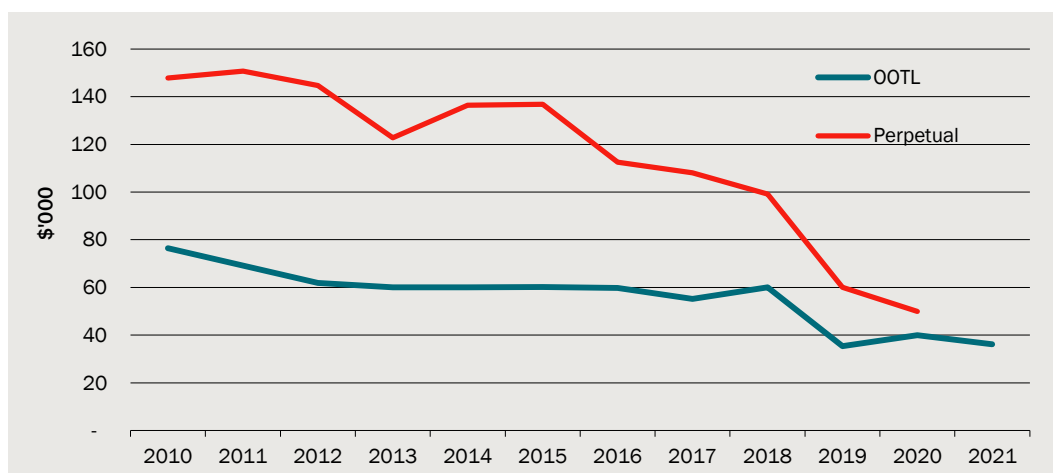


Data source: Office of the Tasmanian Economic Regulator, *Investigation into the Reserve Prices of Owner-Operator Taxi Licences: 1 December 2021 to 31 December 2025*, Issues Paper, p. 14.

- In Hobart, licence values increased rapidly in the early 2000s, peaking at more than \$150 000 in 2011. However, licence values have since declined to less than \$60 000. The following developments in the Hobart taxi market are likely to have contributed to the decline in the value of perpetual licences.
 - High uptake of OOTLs (and to some extent new WAT licences) in the Hobart taxi area.
 - ... New OOTL and WAT licences have increased the total number of taxi licences by around 38 per cent since 2008.
 - ... Despite strong population growth within the Hobart taxi areas of around 14 per cent over the same period (an average growth rate of around 1.1 per cent per year), taxi licence per resident have increased.

- There appears to be significant competition from ridesourcing, with more than 1000 registered ridesourcing vehicles within the Hobart taxi area (nearly 75 per cent of all ridesourcing vehicles registered in Tasmania).
- More recently, Hobart is likely to have been most affected by the COVID-19 pandemic, compared with other taxi areas.
- One interpretation of the decline in licence values in Hobart over the past decade is that the price of perpetual licences have converged on the price of OOTLs (chart 2.14). To some extent, this reflects the regulatory framework operating as it was intended.
 - ... Ownership of OOTLs is restricted to owner-operators, while ownership of perpetual taxi licences are unrestricted meaning that investors that are not otherwise involved in the Tasmanian taxi industry can own perpetual licences.
 - ... Despite these differences, perpetual taxi licences and OOTLs both provide a right to operate a taxi in the Hobart taxi area and would therefore generate the same amount of income.
 - ... Perpetual licence owners have access to a broader range of potential buyers and could reasonably be expected to carry some premium over OOTLs. Nevertheless, it is difficult to reconcile a significant discrepancy between the value of PTLs and OOTLs.

2.14 Traded licence values – Hobart



Data source: Data provided by OTTER, CIE.

- The price of perpetual licences in Launceston continued to increase until recently. Licence values increased from around \$40 000 in 2001, peaking at more than \$110 000 in 2018. Recent transfers have been around \$70 000.
 - In contrast to Hobart, there has been limited take-up of OOTLs and there are now fewer taxi licences per resident than in 2008.
 - There appears to be some competition from ridesourcing, with more than 300 ridesourcing vehicles registered in Launceston (more than 20 per cent of all registered ridesourcing vehicles in Tasmania). This is likely to have been the main factor contributing the recent decline in licence values.
- The price of licences in Burnie has been trending downwards for the past 25 years, despite limited new licences.

3 *Conceptual framework*

Rationale for fare regulation

The key rationale for fare regulation differs between different types of trips, being relatively strong for rank and hailed trips, but weaker for pre-booked trips.

For hailed taxis, search costs are high because of the time to wait until another taxi can be hailed and the uncertain prospect of whether it will be cheaper.

For taxis taken at a rank, there is a strong custom to take the next taxi in the queue, meaning that taxis do not effectively compete with others at a rank. This is a particularly strong justification for regulation of taxi fares for trips originating at airports, where ranks can often be busy and passengers have little scope to choose between options.

For both of these markets, there is also an argument that tourists or other customers unfamiliar with the journey may be vulnerable to overcharging. However, this is a weaker argument for regulating fares, and could apply to almost any type of good or service where the customer lacks experience with the good or service.

For most pre-booked trips, the rationale for fare regulation is less clear, particularly in markets where there is a level of competition (including competition among networks or competition from ridesourcing). Search costs for booked taxis are similar to other goods and services for which prices can be made available online or through other media. The weak rationale for regulation of the pre-booked market has led to there being no fare regulation for vehicles that only participate in the booked market (such as hire cars).

There are some specific parts of the booked market where justifications may exist, such as:

- where the number of taxis is capped for a small market (say, less than 5 taxis), then fares regulation can be used to prevent monopoly pricing, and
- for trips in wheelchair-accessible taxis, where search costs may be higher due to the customers disability or where there are very few wheelchair accessible taxis servicing a region.

The emergence of ridesourcing has dramatically increased competition for the pre-booked point-to-point travel market in some urban areas (particularly Hobart and Launceston). To the extent that taxis compete with other markets, this weakens any argument about regulating fares to reduce monopoly pricing, since customers can choose ridesourcing alternatives if taxis are too expensive. The emergence of ridesourcing has provided impetus for other jurisdictions such as NSW and Victoria to deregulate fare for pre-booked trips.

The impact of fare changes

When considering approaches to setting taxi fares, it is important to understand the impacts of fare changes, including how fare changes are likely to affect various industry participants.

Impact of fare changes on taxi industry revenue

Although fare increases have tended to generate more revenue for the taxi industry in the past, it is less clear that they will continue to do so in the new environment.

The impact of fare changes on industry revenue depend on the 'own price elasticity of demand' (see box 3.1). Goods and services with more close substitutes are likely to be more sensitive to price changes (i.e. more elastic) as there are more opportunities for consumers to choose alternatives. Increased competition from ridesourcing is therefore likely to have made the demand for taxi services more elastic. It is therefore less likely that fare increases will result in more revenue for the taxi industry.

3.1 The impact of a price change on revenue

Basic economic theory tells us that an increase in price will typically reduce the quantity of the good or service consumed (i.e. the demand curve is downward sloping). The impact of a price increase on revenue is therefore ambiguous and depends on the 'own price elasticity of demand'.

The own price elasticity of demand is a measure of the sensitivity of the quantity of a good or service purchased to changes in the price of the good (elasticity is formally defined as the percentage change in the quantity consumed divided by the percentage change in price).

- Where demand is inelastic (i.e. elasticity is less than 1) an increase in price will increase industry revenue (i.e. the price increase outweighs the decline in quantity sold).
- Where demand is elastic (i.e. greater than 1) an increase in price will decrease industry revenue (i.e. the decrease in the quantity sold outweighs the increase in the price).

The available literature (mostly before the emergence of ridesourcing) suggests that prior to the entry of ridesourcing the elasticity of demand for taxis in Tasmania was likely to be inelastic, indicating that fare increases would increase industry revenue.

However, ridesourcing is a relatively close substitute to taxis. As such, demand for taxi services is likely to be more elastic in those taxi areas, where there is competition from ridesourcing (mainly Hobart and Launceston). As such, it is plausible that demand for taxi in those taxi areas is now elastic, meaning that an increase in taxi fares could reduce revenue.

Evidence of the elasticity of demand for taxis

The Victorian Taxi Inquiry's draft report suggested an elasticity of around -1 for Melbourne, based on a study by the Hensher Group.⁴ Booz Allen Hamilton, in a report for IPART in 2003, noted that the majority of international studies reported a demand elasticity of -0.2 to -1.0.⁵ An elasticity of -1 would imply that a fare increase of 5 per cent would decrease demand for taxis by 5 per cent (implying no impact on revenue).

The elasticity of demand is likely to differ between taxi markets within Tasmania:

- In urban markets, where there are more competing transport options, the elasticity of demand is likely to be higher. While public transport and private car travel are not always substitutes for taxi trips, ridesourcing is an increasingly strong competitor with taxis. The more strongly that ridesourcing competes with taxis, the more elastic demand for taxis will be.
- In regional markets where there are fewer public transport options and where ridesourcing services typically have zero or low market share, demand is likely to be less elastic. We are not aware of any studies that specifically estimate the elasticity of demand for regional taxi markets.

Elasticity of demand for ridesourcing

The elasticity of demand for ridesourcing is related to the elasticity of demand for taxi services. The more close substitutes a good or service has, the more elastic is demand. To the extent that the elasticity of demand for ridesourcing is high, this may support taxis being a substitute for ridesourcing, since some of the price responsiveness for ridesharing will be substitution to/from taxis. If the elasticity of demand for ridesourcing is low, this suggests that the consumers of ridesourcing do not perceive there to be close substitutes for it.

Evidence about the responsiveness of demand to surge pricing implies that the elasticity of demand for ridesourcing is relatively low.

Using data of Uber trips in the USA, and relying on Uber's surge pricing algorithm as a source of price variation, Cohen et al (2016) estimate elasticities of demand for Uber's services.⁶ They estimate price elasticities of demand of between -0.25 to -1 depending on the size of the surge threshold. Consumers respond with a greater implied elasticity to large surge pricing, and are relatively inelastic with respect to small surges. Importantly, these are estimates of the short-run price elasticity of demand, and are likely to be

⁴ Rose, J. and Hensher, D., 2013, 'Demand for taxi services: New elasticity evidence', *Transportation*, 41(4), available at: https://www.researchgate.net/publication/257640474_Demand_for_taxi_services_New_elasticity_evidence

⁵ Booz Allen Hamilton 2003, *Appraisal of taxi fare structure issues*, p. 10.

⁶ Cohen, P., Hahn, R., Hall, J., Levitt, S. and Metcalfe, R., *Using big data to estimate consumer surplus: the case of uber*, NBER Working Paper 22627, available at: https://www.nber.org/system/files/working_papers/w22627/w22627.pdf

underestimates of the long-run elasticity, which is relevant when considering issues like the introduction of ridesourcing (rather than small changes in price of ridesharing trips).

Similarly, evidence using data from Iranian ridesourcing company, Tapsi, suggests that the elasticity of demand is -0.25 for 1-hour periods after surge pricing, and -0.54 for a 6-hour period with surge pricing.⁷

However, evidence about long-term changes in prices of ridesourcing suggests that consumers respond much more to these changes. Data reported by Uber suggests that price reductions of around 20 per cent for UberX rides in Chicago and New York City in the US and Perth in Australia provided a significant boost to demand.⁸ The data reported by Uber imply relatively elastic demand of around -2 in Chicago, -3.3 in New York City and -2.7 in Perth (table 3.2).

3.2 Implied elasticity of demand

	Change in price	Change in quantity	Implied elasticity of demand
	Per cent	Per cent	
Chicago	-22.8	44.8	-1.96
New York City	-21.8	72.7	-3.34
Perth	-20.0	54.0	-2.70

Note: Price and quantity changes were compared between December 2013 and December 2014 in Chicago and September 2013 and September 2014 in New York City. The comparison for Perth were based on five weeks before and five weeks after the price change in April 2015.

Source: Uber website, https://newsroom.uber.com/wp-content/uploads/2015/01/uber_PriceCuts_BlogInfographic-01.png; <http://newsroom.uber.com/nyc/2014/10/three-septembers-of-uberx-in-new-york-city/>; and <http://newsroom.uber.com/sydney/2015/06/uberx-rides-are-now-10-cheaper/>, accessed 27 October 2015.

Understanding the long-run impacts of fare changes

To understand the long-run impacts of fare changes, it is important to understand the role of licensing and what drives licence values (see box 3.3).

⁷ Joshaghani, H., Madinazadeh, S.A. and Moradi, R., 2020, *Ride-hailing Demand Elasticity: a regression discontinuity model*, available at: http://gsme.sharif.edu/~madanizadeh/Files/Moradi_Madanizadeh_Joshaghani.pdf

⁸ See Uber website, https://newsroom.uber.com/wp-content/uploads/2015/01/uber_PriceCuts_BlogInfographic-01.png and <http://newsroom.uber.com/nyc/2014/10/three-septembers-of-uberx-in-new-york-city/>, accessed 27 October 2015.

3.3 The value of licences

Although taxi operators must pay for a taxi licence (either through purchasing or leasing), licences are not a 'resource cost'. Taxi licences generate income for the owner (either directly or through lease payments) that reflect excess profits, over and above a normal (risk adjusted) rate of return on capital. This is referred to as economic 'rent'. The value of licences therefore represents expectations of future streams of economic rent.

Taxis are able to earn excess profits because market entry is restricted and therefore licences are scarce. In industries with free entry, any excess profits are generally competed away.

To the extent that there are rents present in the Tasmanian taxi market, this occurs because:

- the number of licences are restricted (through limiting the number of licences that can be released in any given year and setting a reserve price for the issue of new licences), which prevents new entrants from competing away the excess profits; and
- the regulated fares are high enough to allow each taxi to earn excess profits.

Although these 'rents' flow directly to the current licence owner, they are not necessarily the ultimate beneficiary as current owners may have had to purchase the licence (although some may be the beneficiary, where the income earned on the licence exceeds a normal rate of return).

- The Tasmanian Government has been the beneficiary of rents associated with the issue of new OOTLs as operators paid the Government for the new licence.
- In other cases, the ultimate beneficiary may be previous licence owners (i.e. those licence owners that received above normal rates of return).

The Regulator can influence licence values through its advice on the fare-setting methodology (and also through determining the reserve price for new owner-operator taxi licences). To understand the impact of fare increases on outcomes for various participants in the taxi market, it is important to understand how the market adjusts to changes to these key policy settings (see table 3.4 for a summary of the likely long-run impacts).

3.4 Long-run impact of increase in fares

Outcomes for industry participants	Impact on fare increase
Driver income	■ Limited impact
Operator income	■ Limited impact
Consumers outcomes	■ Higher fares ■ Improved waiting times (not in peak periods)
Licence value	■ Increases in licence value (if demand is inelastic) ■ Decreases in licence value (if demand is elastic)

Source: CIE analysis.

The incentives for various industry participants are as follows.

- The number of taxis operating depends on the number of licences and the choices made by **operators**.
 - The number of licences is set through the process outlined above. If an operator thinks an additional taxi could earn sufficient revenue to cover the reserve price of a new OOTL (plus all of the other costs), there is an incentive to bid for a new licence through the tender process.
 - In periods of low demand, some operators may choose not to register a vehicle if they are unable to cover the associated fixed costs.
- As most operator costs are fixed (i.e. do not depend on whether the taxi is on the road), the incentive for operators is to have the taxi ‘on the road’ as much as possible. The main variable costs (i.e. cost that depends on how much the taxi is on the road) are fuel, workers compensation and maintenance/repairs. So long as the taxi can earn sufficient revenue to cover these variable costs during a shift, the operator has an incentive for the taxi to be on the road.
- Despite the incentive for operators to have the taxi on the road as much as possible, the taxi industry tends to operate well below the maximum capacity (i.e. not all taxis are on the road) most of the time (except perhaps peak periods). The main constraint is finding drivers.
- Utilisation rates (i.e. the proportion of the taxi fleet that are on the road during any given period) therefore depends on **drivers’** willingness to work. In general, drivers will be willing to work where their income from driving exceeds the opportunity cost of their labour, which we have observed in numerous taxi markets is below the minimum wage. This tends to mean that driver income tends to be relatively stable (although drivers may require additional compensation to work unsociable hours, such as nights or weekends).

Given the incentives of the various participants, the market tends to adjust to any excess fare increase (i.e. a fare increase that exceeds of the cost of providing taxi services) in the long-run as follows (although this market adjustment might take some time).

- In the short-run, each taxi would earn more revenue (assuming demand is inelastic).
- As revenue is typically shared between drivers and operators based on a 50:50 split (although there appear to be some variations) and this split appears to be relatively stable, driver incomes would increase. An increase in driver income would encourage more drivers to work and the utilisation rates would increase.
 - As utilisation rates increase, there are fewer passengers for each driver, meaning that driver incomes are pushed back down towards the opportunity cost of labour.
 - More taxis on the road could also mean lower waiting times for passengers.
- Operator incomes would also increase, mainly due to the increased utilisation rates (as discussed above, there would initially be an increase in revenue per taxi for each shift, but this would return toward previous levels with more taxis on the road).
 - As operator incomes increase, there would be increased demand for licences. Increased demand for licences would be expected to:
 - ... bid up licence leases and therefore licence values; and/or

- ... in the longer term, this could increase the number of active licences, either through licences that are currently inactive becoming active again, or through the issue of new taxi licences through the process outlined above.
- A combination of more active taxis and/or increasing licence lease costs would return net operator earnings back toward the level prior to the fare increase.

In summary, the long-run impact of a fare increase would therefore be as follows.

- Any additional revenue would mostly be captured by licence owners (as this is the part of the supply chain with restricted entry).
- The fare increase would have limited impact on driver and operator incomes (note that in many cases operators own their own licence).
- Consumers would pay higher fares; however, there could also be some benefit from lower waiting times (as there would be more taxis on the road than under lower fares).

Conceptual framework for setting fares

The dynamics set out above mean that setting fares for taxis is more complicated than for other regulated businesses, such as utility businesses. Because there is free entry up to a point, in the sense that drivers and operators will not put taxis on the road all the time and for every shift, fare changes have the effect of changing entry decisions. A higher fare then leads to higher costs — a higher fare increases the number of taxis on the road, which increases costs related to the driver's time and vehicle operating costs.

In the sections below we detail the anticipated impacts of a fare increase in different circumstances.

Impacts of a fare increase during peak periods where taxi supply is constrained

When all the taxis that can be on the road are on the road, such as periods of peak demand on a Friday or Saturday night, then a fare increase has the following impacts:

- higher fares leads to reduced demand for taxis. The change in revenue depends on how much demand decreases. If this falls by less than the percentage increase in fares, then overall revenue will increase
- assuming that overall revenue increases, this leads to higher expected returns for drivers and operators. Over time, higher expected returns for operators are expected to be mainly passed through to licence owners through higher lease rates for taxi licences. With the reserve prices for OOTLs fixed, this may lead to more OOTL uptake in the longer term
- since all taxis are on the road, higher expected returns to drivers does not lead to additional taxis being available for customers. In the longer term, this may increase OOTL uptake and taxis available to provide services
- lower demand means that customers obtain improved services in terms of reduced time waiting for taxis. In the longer term this effect is stronger if additional OOTLs are taken up.

It is not clear that it is appropriate to increase fares to ration limited taxi supply, given that this limit has been determined through government regulations.

Impacts of a fare increase during non-peak periods where taxi supply is not constrained

During period when not all taxis are on the road, an increase in fares has a different pattern of impacts:

- higher fares leads to reduced demand for taxis. The change in revenue depends on how much demand decreases. If this falls by less than the percentage increase in fares, then overall revenue will increase
- higher expected returns for drivers encourages additional taxis to be used for service. This means that more taxis are on the road servicing a smaller pool of demand
- the share of the time that each taxi has a passenger (the utilisation rate) is reduced
- customers find it easier to get a taxi because there are more taxis available and fewer customers.

Impacts of a fare increase when taxi services are currently not viable

There are taxi areas within Tasmania where there are currently no taxi services. These are areas that are small and with limited demand. It is possible that a fare increase could make a service viable in these areas. That is, with current fares, a service is not viable, while with higher (or differently structured fares) a service is viable. This would be expected to be somewhat unlikely as most of the factors that determine viability relate to the amount of demand (such as population) and won't be impacted, and a higher fare will also reduce demand for taxis.

What fare changes will not do

There are a range of objectives that fares changes do not typically impact on:

- fares are unlikely to impact on driver hourly earnings, except in peak periods where there are limits on taxi numbers and there are relatively fixed shares of revenue for drivers and operators. Over many years and across many jurisdictions fare increases have been sought to ensure a good wage for drivers. However, this outcome did not occur, with fare increases instead translating into higher licence plate values⁹
- more generally, fares do not influence the distribution of taxi revenue across the different participants in the taxi industry
- fares do not have the impact of allowing for the costs of a taxi to be recovered, except where fares were too low to have a viable service at all.

⁹ See for example IPART 2018, Box 6.1, Review of taxi fares in NSW and taxi licences outside Sydney from 1 July 2018, <https://www.ipart.nsw.gov.au/sites/default/files/documents/final-report-taxi-fares-in-nsw-and-taxi-licences-outside-sydney-from-1-july-2018.pdf>.

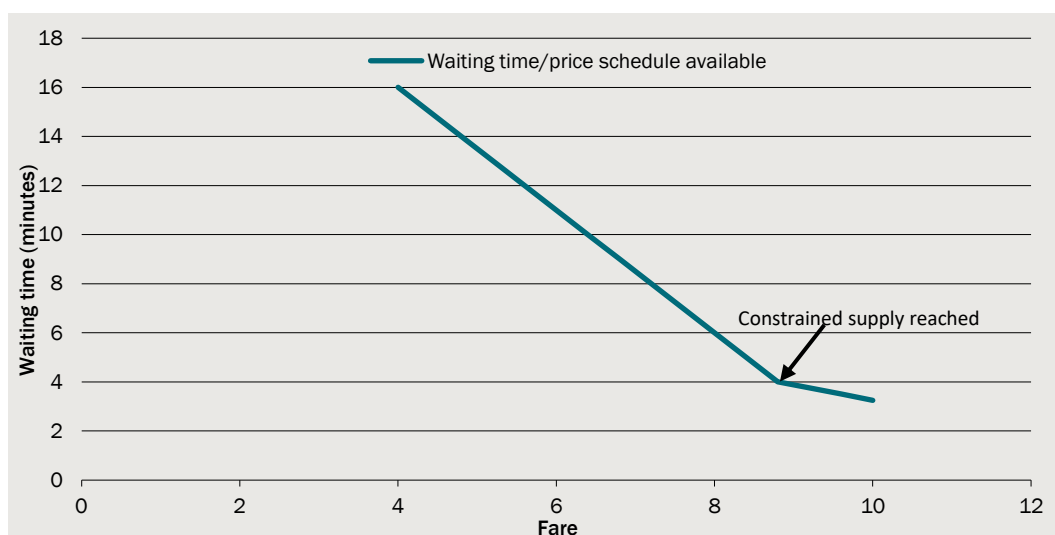
- where there are positive licence plate values, then this indicates that the costs of providing taxi services and more are being recovered with existing fare levels
- where licence plate values are close to zero, a change in fares will generally lead to costs expanding or contracting in the same direction (i.e. higher fares lead to higher costs and vice versa). Fare increases lead to entry as taxis are operated for more time and more shifts or the reverse. Therefore overall industry costs are responsive to the fares that are set, rather than fixed.
- fares do not have the impact of increasing efficiency — for example, reductions in fares will not tend to encourage more efficient provision of services. In most taxi areas taxis are competing against one another, and already have incentives for cost reduction. Fare changes will instead primarily change the amount of time taxis are in service.

Overall conceptual framework for fares

We can map the outcomes for customers and the taxi industry based on the discussions above.

- The level of fares will choose a point on the waiting time/price curve that taxi customers receive (chart 3.5). That is, a high fare means high levels of taxi availability and low waiting times. A low fare means low taxi availability and high waiting time.
- Higher fares will mean taxis are on the road more often. However, the utilisation rate — time on the road with a passenger — will fall because there are more taxis and less demand (chart 3.6).

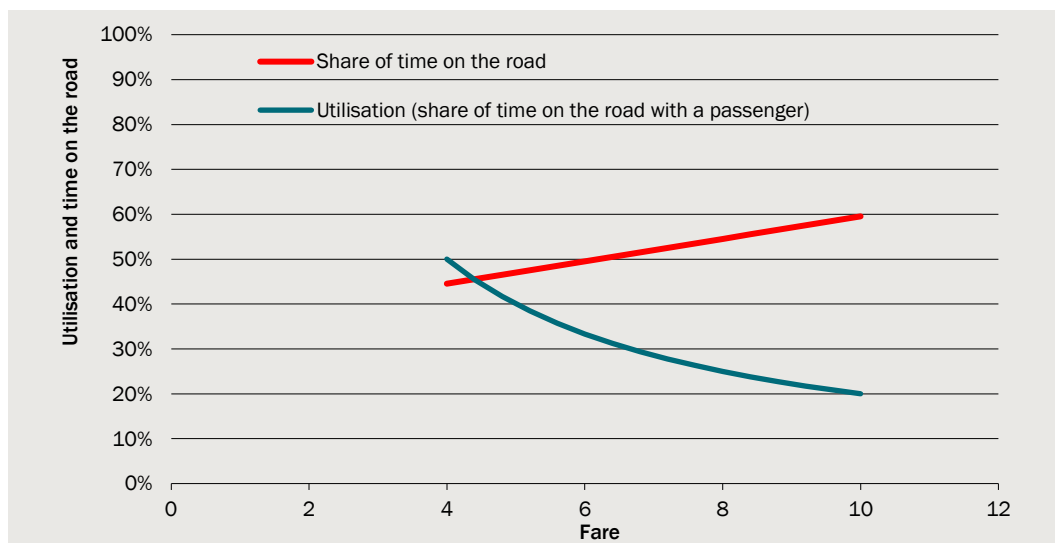
3.5 Outcomes for customers at different fare levels



Note: Illustrative only.

Data source: CIE.

3.6 Outcomes for the industry at different fare levels



Note: Illustrative only.

Data source: CIE.

This means that a fare decrease would tend to be favourable for customers when there were already lots of taxis around. In this case, taxi utilisation rates would be low and waiting times would be low — customers could obtain reduced fares without impacting much on waiting times. A fare increase would be favourable for customers when there were large waiting times for taxis (or not services at all) and taxis had high utilisation rates.

From the taxi industry's perspective, higher fares would tend to expand the industry, in terms of both costs and revenues. This would generally simply compensate for the additional effort in providing services, such as driver time, with any excess going into higher taxi licence lease rates and eventually higher uptake of new taxi licences.

Perspectives on fare levels

Following on from the conceptual framework set out above, some perspectives on the level of fares are set out below.

Licence values

As discussed above, licence values reflect economic rent (i.e. excess profits), rather than a resource cost. In most regulated industries, independent regulators attempt to set prices at an 'efficient' level (i.e. a level that does not allow regulated industries to earn excess profits).

Consistent with the approach used in most other regulated industries, the matters to be considered by the Regulator (as set out in the Economic Regulator Act — see box 1.1) explicitly require the Regulator to consider: the efficient costs of providing taxi services, lower costs for consumers and the protection of consumers from abuses of market power.

From this perspective, the current level of fares is too high in all taxi areas where licences have a significant value. One interpretation of the Terms of Reference is that reducing the value of licences towards zero (through either lower fares or more licences) should be an objective of fare regulation.

Fairness considerations

Another perspective relates to the ‘fairness’ for licence owners of reducing licence values towards zero as an explicit objective of fare regulation. Although the Terms of Reference do not explicitly require the Regulator to consider ‘fairness’, it is nevertheless an important issue that the Regulator could consider as part of the social impacts of taxi fares or as ‘any other matter that the Regulator considers relevant’ (see box 1.1 above). This is typically an important consideration for governments.

Current licence owners have at some point purchased their taxi licence on the expectation it would provide a source of income. From that perspective it may be considered unfair for the government to subsequently erode the value of that asset through reducing fares.

An alternative perspective is that taxi licences are a risky asset and buyers have chosen to accept the associated risks when they purchased the asset. A key associated risk relates to government control of fares and other potential changes to the regulatory framework that affect licence values. Buyers should have undertaken due diligence and been aware of these risks when they purchased the licence.

However, it is relevant to note that over recent years, OOTL owners have purchased the licence from the Tasmanian Government. As such, some of the industry rents have already been captured by the Tasmanian Government (rather than the licence owner).

Industry viability

Industry viability appears to be a key objective of the broader regulatory framework. Setting maximum fares at a level where the industry becomes commercially unviable would be a poor outcome.

The first point to note is that the taxi industry must be viable at current fare levels in all taxi areas where licences retain a significant value. As discussed above, the value of taxi licences is an indicator of excess profits. It follows that any industry where there are excess profits must be viable.

Through the market adjustments discussed above, changes in revenue (such as through fare changes or changes in demand) tend to be reflected in licence values, with net driver and operator income remaining broadly stable in the long run.

- This means that in the long run, licence values tend to absorb negative revenue shocks (there is evidence that this occurred during the COVID pandemic).
- On the other hand, these industry dynamics mean that any excess revenue is ultimately captured by licence owners. This means that even though the taxi industry

as a whole is making excess profits, the (net) income earned by drivers and operators may be low.

Secondly, there is a difference between the viability of individual businesses within the industry and the viability of the industry generally. It is possible that a negative revenue shock could mean that some taxi businesses become unviable and leave the industry. However, when some businesses leave the industry, there will be fewer taxis on the road at any given time and therefore more revenue for the remaining taxis.

From this perspective, the consequence of lowering fares would be to reduce the number of taxis on the road and therefore increasing waiting times for passengers (see the discussion above).

Industry viability is a concern only in taxi areas where:

- licences do not have a significant value and therefore licences cannot absorb significant revenue shocks
- there are few taxis that operate in the area meaning that any taxis that leave the industry would significantly disrupt the availability of services.

Fare structure

Fare structure refers to the balance between the different fare components (the flag fall, the kilometre rate and the waiting time). Changing the relativities between the fixed and variable component of fares will affect different taxi trips differently.

- Increasing the fixed component of the fare (the flag fall) relative to the variable components (the kilometre and waiting time rate) will make shorter trips relatively more expensive compared to longer trips.
- Alternatively, increasing the kilometre and waiting time rates relative to the flag fall would make longer trips relatively more expensive compared to shorter trips.

Changing the fare structure will therefore have an impact on the incentives faced by drivers and the choices made by passengers. An imbalance between the fixed and variable fare components could lead to drivers having a strong preference for particular trips over others. For example, a low flag fall and high kilometre rate would result in drivers strongly preferring longer trips over shorter trips. This could manifest in various ways, such as:

- an excessive number of taxis waiting at airports to try to get longer fares; and/or
- drivers refusing shorter trips (under the regulations drivers may not refuse passenger; however, this is difficult to enforce in practice).

Imbalances in fares also affect the choice made by potential passengers. For example, an excessively high flag fall could make short trips sufficiently unattractive that passengers may use alternative transport options (such as walking), or choose not to travel at all. This could reduce overall demand for taxi services.

Unlike some other regulated industries, allocating particular types of costs to particular fare components will not result in an efficient fare structure. Most taxi costs are either

fixed or quasi fixed, meaning that the marginal cost of each trip is relatively low (if the alternative to an additional trip is cruising around waiting/looking for a passenger).

In principle, it may be possible to find an optimal fare structure. However, this would require large amounts of information that is not available for the Tasmanian taxi industry. The efficient fare structure may also vary depending on demand. Consequently, the same fare structure is unlikely to be efficient at all times.

Given these constraints, there is no analytical basis for changing the fare structure. However, a change to the fare structure could be considered where:

- there is widespread support across industry (as industry will generally have a bias towards the status quo, widespread support across industry is likely to be a good indicator that the current balance is inappropriate)
- there is some evidence that the existing fare structure is leading to perverse outcomes, such as:
 - consistently an excessive number of taxis at the airport
 - evidence that industry is refusing particular types of fares (or waiting times are excessive).

Practical considerations

As discussed above, there are 24 taxi areas in Tasmania (reforms to the taxi areas are outside the Terms of Reference). With market conditions varying significantly across the different areas, it is possible that a different fare levels and/or structure are appropriate across each taxi area.

That said, it is considered impractical to have more than the current 3 different fare schedules. There does appear to be scope to recommend which fare schedule should apply in which taxi area.

In assessing which fare schedule should apply in different taxi areas, there are some additional practical considerations. As a general principle, the same fare schedule should apply to all taxi trips (particularly rank and hail trips) that originate within a given taxi area.

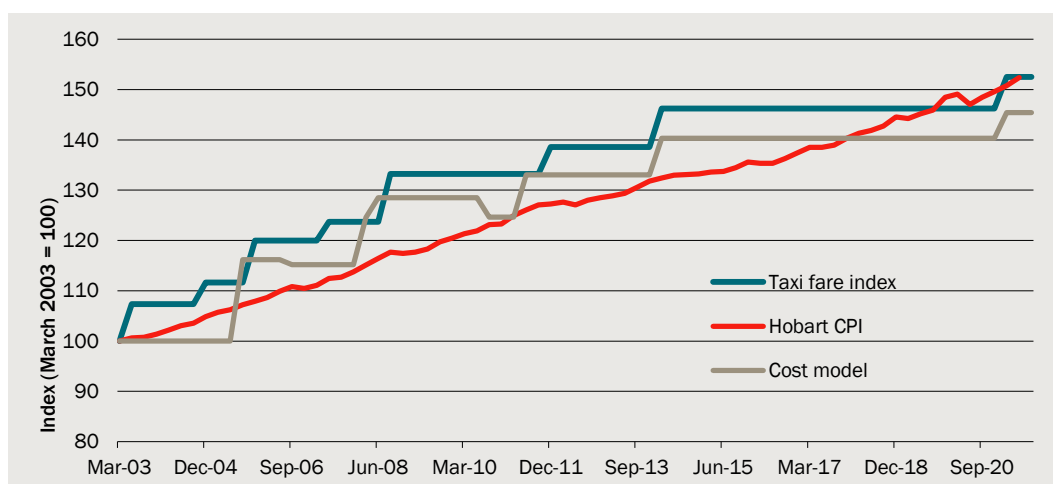
- As the Launceston taxi area overlaps with both the Perth and West Tamar taxi areas, the same fare schedule should apply in all of these taxi areas.
- Where a taxi takes a passenger from within their taxi area to another taxi area, they are also permitted to take a passenger back again (although it is not clear how often that occurs). It would therefore be preferable for the same fare schedule to apply in areas where trips into another taxi area occur relatively frequently. Although there are no data available on the number of trips that cross-over taxi areas (and whether the driver is able to find a fare back again), this is most likely to occur in taxi areas on the fringe of larger population centres.

4 Review of current fare setting arrangements

Overview of current fare setting arrangements

Since 2003, taxi fares in Tasmania have been adjusted at varying intervals, generally based on changes in either the CPI or a cost index. For much of this period, fares increased more quickly than the CPI (chart 4.1). However, the recent long pause on fare increases has meant that taxi fare increases are now in broad alignment with general inflation over the period.

4.1 Historical taxi fares in Tasmania



Note: The chart shows a new data point for the cost model only when it has been updated.

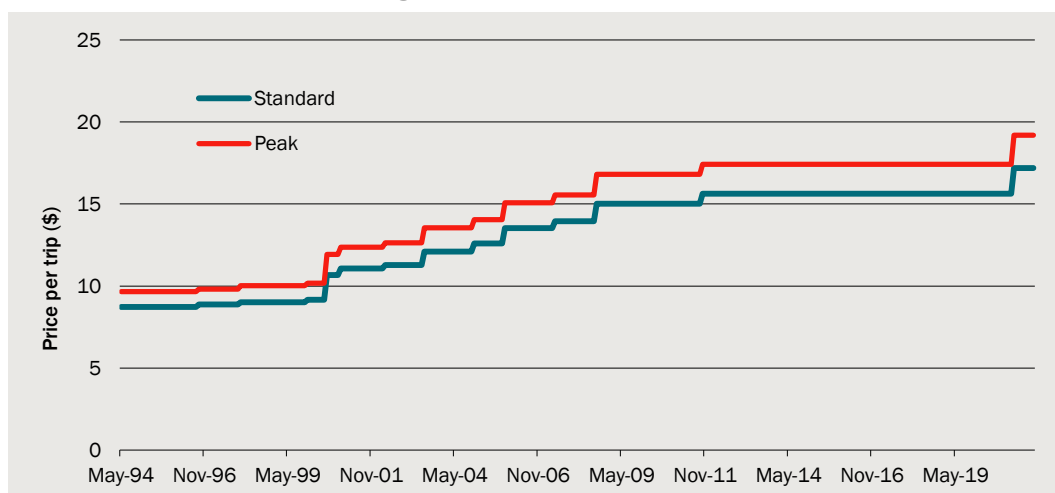
Data source: ABS Consumer Price Index, All Groups, Hobart; Department of State Growth; CIE analysis.

Frequency of fare changes

The frequency of taxi fare changes has varied over time (chart 4.2).

- In the second half of the 1990s, there were (relatively modest) fare changes approximately every 2 years on average.
- During the 2000s, fare increases were relatively frequent with a fare change approximately every year on average.
- There have been only 3 fare changes since 2008 and until the recent fare change (that took effect from February 2021) fares had been unchanged for 7 years.

4.2 Timeline of taxi fare changes



Note: Fares are for major metropolitan areas based on a 5 kilometre trip with 5 minutes of waiting time.

Data source: Department of State Growth; CIE analysis.

The cost index

The cost index developed and used to adjust taxi fares periodically has the components shown in table 4.3. The taxi cost index does not include components for:

- labour of operators and drivers, and
- taxi licence lease costs.

The cost model can therefore be considered more like an operator cost model. This may reflect the view that the 50/50 revenue sharing arrangement means that driver costs are directly in proportion to operator costs.

4.3 Taxi cost index components

	Cost weight
	Per cent
Fixed costs	
Vehicle lease cost	7.7
Vehicle equipment	3.8
Vehicle registration	1.9
Annual licence and inspection fees	1.5
Radio Fees	11.6
Vehicle Insurance	6.5
Workers Comp Insurance	6.6
P/Accid Insurance	2.2
Accreditation costs	0.6
Total fixed costs	42.4
Variable costs	
Fuel	30.2

	Cost weight
	Per cent
Vehicle maintenance labour & parts	25.8
Tyres - new	1.6
Total variable costs	57.6
Total costs	100.0

Source: Department of State Growth Tax Cost Index.

The inflators applied to each cost item of the cost index are shown in table 4.4.

4.4 Inflators applied to cost items

Cost item	Inflator
Vehicle lease cost	Hobart CPI – Motor vehicles component
Vehicle equipment	Industry quotes
Vehicle registration	Change in actual charges
Annual licence and inspection fees	<ul style="list-style-type: none"> ▪ Change in actual charges ▪ Industry quotes
Radio Fees	Industry quotes
Vehicle Insurance	Hobart CPI – Insurance component
Workers Comp Insurance	Estimate based on 6 per cent of estimated driver income
Personal accident & sickness insurance	Hobart CPI – Insurance component
Accreditation costs	Hobart CPI
Fuel	<ul style="list-style-type: none"> ▪ Based on estimated fuel consumption ▪ Price based of 6 week average using Australian Institute of Petroleum retail price data for Tasmania.
Vehicle maintenance labour & parts	Hobart CPI – Transportation
Tyres - new	Industry quotes

Source: Department of State Growth.

Key issues with current arrangements

The key issues with current fare-setting arrangements in Tasmania are discussed below. As there have been minimal changes to the fare setting process since the previous inquiry into 2012-13, the issues set out below are similar to those previously identified.

Objectives of fare regulation are unclear

The objectives of fare regulation are not clearly specified. In other regulated industries it is well established that pricing at a level that reflects the efficient cost of providing the services delivers the most efficient outcomes for the community (including: an efficient

price signal to consumers and a fair rate of return on capital for service providers). However, for various reasons (including the nature of the industry and the legacy of historical approaches to regulation), taxi fare changes involve trade-offs that must be weighed up.

Although the Terms of Reference refers to a range of matters that must be considered there is no guidance as to how these matters should be weighed against each other.

Limitations of cost-based pricing

Taxi cost indices have historically been used as a basis to adjust taxi fares in many Australian jurisdictions, including Tasmania. Taxi cost indices attempt to measure the change in the cost of providing taxi services and fares have been adjusted accordingly. However, this form of cost-based pricing has several limitations.

No consideration of fares levels

Applying a cost index is essentially a mechanical process, with cost **increases** (as measured by the taxi cost index or CPI) applied to the current fare schedule, with little consideration given to whether the existing **level** of fares is appropriate. If fares have been set too high or too low in the past, then this is locked in through the application of changes to fares based on changes to costs.

When using a cost index it is necessary to periodically reconsider the appropriate level of fares, as well as how they should be changed. Doing this requires greater clarity on the objectives of fare regulation than is currently articulated by either the legislation or past reviews of Tasmanian fares.

One indicator that fare levels are too high, given the number of taxis allowed, is the value of licence plates. Taxi licences have value because the revenue that can be earned from the operation of a taxi is higher than the efficient costs associated with providing the service. Rising licence values are therefore an indication that fares are moving further away from the efficient level.

The limitations of cost-based pricing was demonstrated in several Australian jurisdictions in the period prior to the entry of ridesourcing. During this period, the application of taxi cost indices tended to produce fare increases that exceeded general inflation. Together with limited licence releases, this led to increases in licence values, indicating that fares were moving further away from the efficient level.

Similar outcomes were observed in Tasmania during the 2000s with real fare increases and rising licence values in both Hobart and Launceston.

Taxi cost indices measure input price changes rather than cost changes

Taxi cost indexes actually measure input price changes, rather than changes in cost *per se*. In particular, input price changes are reflected in cost indices, but not changes in the quantity of inputs (from productivity improvements, for example). One recent example of

cost changes that are not reflected in a taxi cost index is the reduction in the quantity of fuel used for those taxi operators that have shifted to hybrid vehicles over recent years.

Note that this problem is not addressed through periodic re-weighting of the taxi cost index (although this is important).

Is cost based fare setting still appropriate in a competitive market?

Although it is useful to understand how taxi costs change over time, it is not clear that this approach remains appropriate in the new environment, with competition from ridesourcing (in at least some taxi areas).

The taxi industry has lost significant market share to ridesourcing in both Hobart and Launceston, partly due to lower prices (except where surge pricing applies). Raising taxi fares risks losing further market share to ridesourcing.

Although operators could choose not to charge the maximum fare, this appears to happen infrequently in larger markets (this is consistent with observations in other jurisdictions).

Issues with the current cost index

In addition to the limitations of cost-based pricing *per se* (discussed above), there are also several specific issues with the current cost index.

Items included in cost index

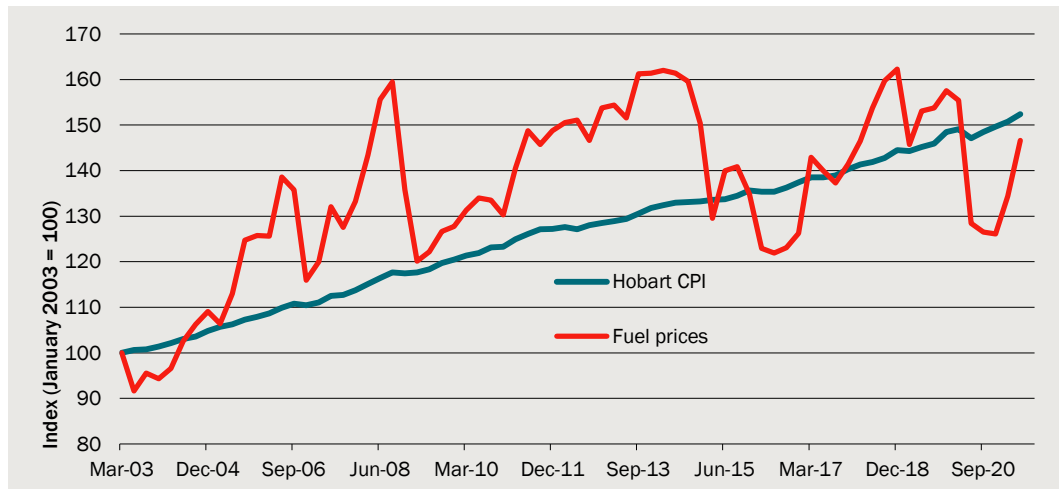
The exclusion of several major cost items (including driver and operator labour and licence-related costs) means that the other items receive far higher weights than they otherwise would. This can distort the estimated cost change, particularly where the change in costs for a particular cost item are not closely correlated with other cost items.

This is particularly relevant to fuel prices, which tend to be much more volatile than other cost items. Furthermore, the existing cost model is based on older fuel efficiency estimates that are not reflective of the fuel efficiency of much of the current fleet.

- In the current cost model, the weight on fuel prices is close to 30 per cent.
- This compares to a weight in our proposed cost model of 5-10 per cent (see chapter 5).

Although automotive fuel prices have grown at a slightly slower pace than the Hobart CPI over the period since 2003 (implying that over-weighting fuel prices would lead to slower growth in taxi fares over time), they have been significantly more volatile (chart 4.5). Furthermore, there have been episodes where fuel prices have grown at a faster pace than general consumer price inflation and this has tended to drive fare increases (see below).

4.5 Automotive fuel prices compared with general consumer price inflation



Data source: ABS Consumer Price Index, All Groups, Hobart; ABS Consumer Price Index for automotive fuel, Hobart; DIER; CIE analysis.

The cumulative impact of over-weighting fuel in the cost model is shown in chart 4.6. Although the cumulative impact is minimal at the present time, the impact has been as high as 8 percentage points.

4.6 Cumulative impact of overweighting fuel on the cost index



Note: Measured based on the 2003 weight for fuel (28.9 per cent) less a weight of 10 per cent, multiplied by the difference between the CPI fuel index and the CPI All Groups index.

Data source: ABS Consumer Price Index, All Groups, Hobart; ABS Consumer Price Index for automotive fuel, Hobart; DIER; CIE analysis.

Inflators applied to cost items

The current cost model applies inflators based on:

- ABS CPI components
- quotes from suppliers
- Government determined fees and charges, and
- Calculations based on past fare increases.

It is often the case that cost indices use multiple variable sources of data. If an independent and publicly available source can be found then in general this should be preferred to a supplier quote.

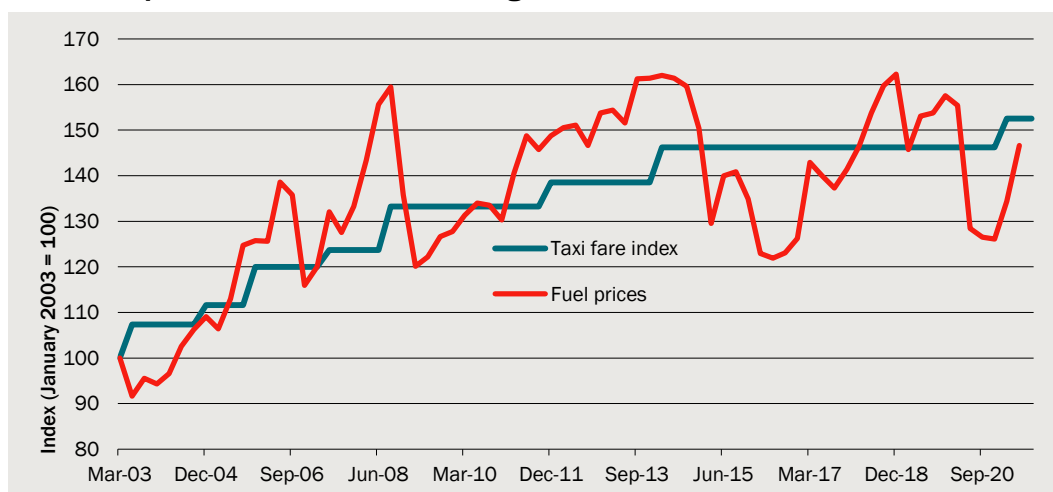
The period over which inflators are considered is also not always clear. For instance, it appears that fuel prices reflect a six-week average fuel price. This may lead to the measure of costs not appropriately reflecting conditions faced by the taxi industry over the past year.

Lack of a formal process

There is currently a lack of a formal process for reviewing fares. In particular, the cost index model has been applied inconsistently. This means that there has been no consistent treatment of the periods over which inflator data is taken. It has also meant that the spreadsheet model is subject to inaccuracies.

A lack of a clear timetable for reviewing fares can also lead to biases in the timing of when the cost index is used, as this has been subject to industry lobbying. Historically, the frequency of fare increases appear to have been driven to some extent by fuel price increases. In particular, there were more frequent fare increases during the 2000s, a period of rapidly rising fuel prices (chart 4.7). More recently, there have been a couple of episodes of rising fuel prices that triggered fare increases, although there has been no clear trend in fuel prices over the past decade or so despite significant volatility. Nevertheless, inconsistent application of the cost index creates a risk that taxi fares respond to rising fuel prices, but these fare changes are not reversed when fuel prices subsequently go down.

4.7 Fuel price increases and fare changes



Data source: ABS Consumer Price Index for automotive fuel, Hobart.; DIER.

More recently, the long period of stable nominal fares meant declining real fares. This put downward pressure on licence values and kept fares closer to efficient costs than would have been the case had a cost index been regularly applied. Reducing real fares through inflation is a legitimate policy decision and is likely to have delivered better

outcomes than applying a cost index, particularly to Tasmanian consumers. That said, such a decision should be the outcome of a transparent process, with the decision explained to stakeholders, rather than a default position.

A further disadvantage of an ad hoc and irregular approach to fare reviews is that a long pause on fare increases without a formal decision can create an expectation that a large fare increase is needed to 'catch up' with past cost increases.

Some industry stakeholders also argued that smaller more frequent changes to fares are preferred over long periods with no fare change, followed by a large increase.

More generally, we understand that the fare review process has generally involved circulating proposed fare changes to industry stakeholders for comment. Although consultation is good practice, there appears to be little transparency around this process and no opportunity for the general public or any public advocacy groups to provide feedback.

5 *Options for a new fare setting methodology*

Objectives of fare regulation

As discussed, objectives are not clearly stated. However, some overarching objectives would include:

- Consumer protection — concerns about consumer protection are evident in the Terms of Reference. For example, the Terms of Reference requires that the Regulator must consider:
 - the efficient cost of providing taxi services
 - the protection of consumers from abuses of monopoly or cartel power in relation to prices and standards of services.
- Ensuring a viable industry.
- Ensuring there are sufficient taxis to meet demand (i.e. avoiding excessive waiting times).

A specific constraint is that the fares for wheelchair accessible taxis and standard taxis must be aligned.

Options for assessing the level of fares

It is important that regulated taxi fares are reviewed at regular specified intervals (although fares need not be adjusted after every review).

Approaches to assessing the level of fares fall into two categories:

- cost index approaches, whereby changes in taxi fares are anchored to the change in total costs of providing a taxi service over time measured by the index, and
- approaches that seek to set fares in a way that balances supply and demand.

Approaches that seek to estimate the average cost per taxi trip and set fares at a level that recovers those costs (or similar) have generally not been used and have therefore not been considered here. In general, this type of approach would require accurate data on the number of trips per year and the average fare, which is not available. Furthermore, relatively small errors in the underlying estimates (for example, in relation to the number of trips per shift or the average fare) potentially lead to significant changes in fares leading to undesirable fluctuations in fare levels.

Importantly, the cost index approach is useful for making changes to fares over time, but it is insufficient by itself to determine whether the level of fares is appropriate. This is because the annual cost of operating a taxi depends crucially on the utilisation of the taxi,

and hence both supply (cost) and demand (utilisation) factors need to be taken into account.

Some jurisdictions make fare decisions based on a combination of these approaches. For example, in their decision to leave maximum fares unchanged for unbooked taxi travel, the Essential Services Commission of Victoria considered a fall in their taxi cost index, supply and demand conditions, and practical considerations informed by stakeholder consultation.¹⁰

Cost index approach

Although cost-based pricing has several limitations, one option for a fare setting methodology is to continue with a cost index approach, with a revised cost index with weights that more closely reflect the current industry cost structure.

There are two components to building a taxi cost index:

- identifying each cost category and estimating weights that reflect their relative importance; and
- estimating changes in each cost item over time.

These two components are combined to form a single index representing the average cost of providing taxi services over time. Typically, the weighting of costs in the index is based on the share that each represents in the total cost for operating a taxi with average utilisation. That is, the driver, fuel, and other costs borne by an operator for a taxi driving an average number of kilometres and taking an average number of trips.

However, to the extent that utilisation is uncertain and determined by demand and supply factors, this will only affect the weighting of cost items, and not the change in cost items over time. If cost items are changing at a similar rate over time, then there is little impact from misestimation of weights.

Implementing this approach for Tasmania requires updating of the cost model to estimate new weights (see below), and to estimate changes in driver labour costs which are not included in the existing taxi cost index.

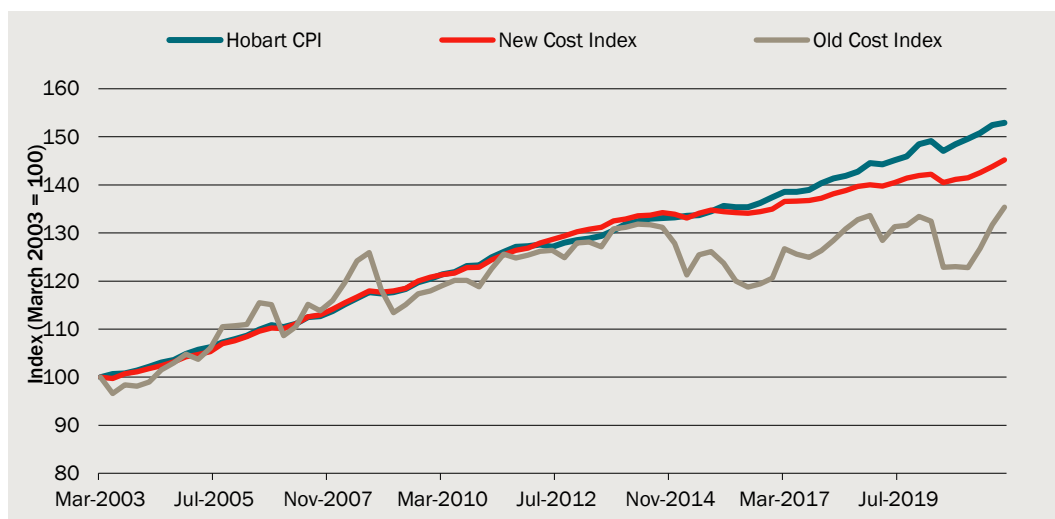
Chart 5.1 backcasts the existing cost index and the cost index proposed below and compares with the Hobart CPI. Note that where a full time series of some components are not available (such as where the existing cost model has relied on industry quotes or actual data) we have applied the Hobart CPI. These series also apply fixed weights (i.e. does not allow the weights to change based on relative price movements). As such, they are indicative only and may not exactly reflect the application of the old cost model.

Over the period since 2003, the proposed cost index has grown at a faster pace than the old cost index. This mostly reflects the inclusion of labour costs (together driver and

¹⁰ ESC, 2020, *Unbooked taxi fare review — Final decision*, available at: <https://www.esc.vic.gov.au/sites/default/files/documents/FDP%20-%20Unbooked%20taxi%20fare%20review%202020%20-%20Final%20decision%20-%2020200713.pdf>

operator labour have a weighting of around 58 per cent in the proposed index — see below), which have grown at a faster pace than other cost items in the index.

5.1 Cost index comparison



Note: For illustrative purposes, fixed weights are applied.

Data source: CIE estimates.

Revised cost weights

Cost weights will vary depending on a range of factors, including: the type of vehicle and fuel efficiency, utilisation rates, approach to booking services and licence lease payments in the relevant taxi area.

The proposed cost weights shown in table 5.2 are based on indicative cost models for Hobart and Launceston, developed using information gathered through consultations with Tasmanian taxi operators and networks, together with desktop research to obtain publicly available costs such as registration and MAIB costs (see appendix A for further details).

The Hobart and Launceston taxi markets are currently experiencing unusually low levels of demand, partly due to the effects of the COVID-19 pandemic. These effects are expected to be temporary with a significant recovery expected (although possibly not to pre-COVID-19 levels) as vaccination rates increase and COVID-19-related restrictions are lifted. As such, these cost weights are based on expectations of more ‘normal’ conditions (for comparative purposes, a cost model based on current conditions is also developed in appendix A).

The weights are based on a standard taxi (cost models and weights are estimated for WATs for comparative purposes — see appendix A). The composite index is weighted based on the total number of current taxi licences (including PTL, OOTL and WAT licences) in: Hobart (75 per cent) and Launceston (25 per cent).

5.2 Proposed cost weights

	Hobart	Launceston	Composite ^a
	Per cent	Per cent	Per cent
Vehicle including stamp duty	4.2	4.3	4.2
Registration, Motor tax, and MAIB	1.9	1.5	1.8
Network fees	9.0	8.3	8.8
Operator labour	8.1	6.5	7.7
Servicing, maintenance and repairs	6.2	6.7	6.3
Workers compensation	3.0	3.0	3.0
Inspections	0.4	0.4	0.4
Fuel	5.4	9.9	6.5
Comprehensive insurance	0.0	0.0	0.0
Licence lease	11.8	9.5	11.3
Driver labour	50.0	50.0	50.0
Total	100.0	100.0	100.0

a The composite index is weighted based on the total number of taxi licences (including PTLs, OOTLs and WAT licences) in; Hobart (75 per cent); and Launceston (25 per cent).

Note: These weights are calculated based on dividing the cost of each category by the total cost in table A.4.

Source: CIE.

Inflators

The set of inflators that should be applied for these cost categories are as per table 5.3. Appendix B provides greater details about the set of inflators that should be applied. All are publicly available from ABS for Hobart, with the exception of the actual fees for registration, motor tax and MAIB fees, which are set by the Tasmanian Government.

5.3 Inflators to be applied for the cost index

Cost category	Inflators to be applied
Vehicle including stamp duty	CPI Motor Vehicles
Registration, Motor tax, and MAIB	Use change in actual prices, set by government
Network fees	CPI Communications
Operator labour	Wage Price Index
Servicing, maintenance and repairs	CPI Maintenance and Repair of motor vehicles
Workers compensation	Wage Price Index
Inspections	CPI All Groups
Fuel	CPI Automotive Fuel
Comprehensive insurance	CPI Insurance
Licence lease	See below
Driver labour	Wage Price Index

Source: CIE.

Treatment of licence values

Unlike the current cost index, the proposed cost index includes licence lease payments. As discussed above, licence-related payments are not a real cost; rather, it reflects above-normal profits (economic rent) that persist due to restrictions on licence releases.

It is important that licence-related costs are included in a cost *index*.

- There is potentially a case to exclude licence leases if the purpose of the cost model was to estimate the *level* of an efficient fare (note that this approach has not formally been considered for practical reasons — see above).
- However, the purpose of a cost index is to estimate *changes* in the cost of operating a taxi. Excluding licence leases from the cost model used to derive weights for a cost index would not mean that licence lease payments would fall to zero. It would simply mean that other items would get a higher weight.

Nevertheless, licence values should be treated differently to other cost items. In particular, this item should not be inflated based on rising licence values. This would introduce circularity into the fare setting process (i.e. fare increases lead to rising licence values, which would feed back through into higher fares). Rising licence values imply that licence owners have been able to extract additional rents, an indicator that fares are too high.

The treatment of licence values depends on the objectives of fare regulation. A key advantage of including licence values in the cost index is that it provides a framework to address licence values directly. Potential approaches to treating licence values are discussed below.

No inflation

One approach would be to not apply an inflator to the licence lease component of the index. This approach implies the objectives would be to maintain the status quo, including:

- maintaining fares broadly stable in real terms
- maintaining licence values at the current level.

In general, the potential for inefficient outcomes associated with modest year-to-year fare changes (such as those that would typically be delivered by a cost index) are limited. However, the risk with mechanically applying a cost index is that fares can move further away from the efficient level over time (as was observed in some Tasmanian taxi areas, as well as in other jurisdiction during the 2000s) due to a range of factors, including:

- inaccuracies in the cost index, such as where the inflators used do not reflect actual taxi industry-specific cost changes
- productivity improvements that have not been taken into account (due to information limitations)
- growing demand that is not matched by new licences.

Licence value targets

An alternative approach would be to target an appropriate level for licence values and deflate (or less likely inflate) the licence lease component of the index towards the target value over time. Note that the deflator applied need not reflect an immediate transition to the target value, but could specify a pathway over time. The pathway could also be periodically adjusted to reflect actual outcomes.

The targeted licence level would depend on the government's objectives, which should weigh up factors such as: protecting consumers from the abuse of market power; adequate supply of licences (particularly in the context of waiting times); and fairness considerations for licence owners (see discussion above). Some potential targets could include the following.

- Reducing licence values towards zero — if the objective is to set fares at an efficient level (which is generally the objective of price regulation in other industries), this would imply a target licence value of zero. However, possible consequences of seeking to eliminate licence values to zero could include:
 - An increase in waiting times — as discussed above, lower fares reduces the incentive for drivers to work and could potentially increase waiting times for passengers. In the longer term, regulating fares at a level where licences values are close to zero would mean there is little incentive to bid for new OOTLs when this process re-commences in 2025 (as the reserve price of OOTLs is greater than zero in all taxi areas).
 - Fairness for licence owners — licence owners who have paid for their licence would consider it unfair for the government to seek to eliminate the value of their asset.
 - ... This particularly applies to operators who have purchased OOTLs over recent years. Longer-term licence owners are likely to have already earned some return on their asset.
 - ... Although it is reasonable to argue that those that have purchased a licence should have factored in the risk that taxi industry reforms (or other market developments) would reduce the value of licences, the approach to selling OOTLs over recent years has meant that the government has effectively captured the rents. One perspective is that it could be considered unfair for the government to capture the rents through the licence release process and then seek to reduce the value of these licence through fare regulation.
- Maintaining licence values at current levels — in principle, this approach is similar to applying no inflator to the licence lease component of the index (see above). However, as noted above, licence values could still change even if no inflator is applied. In these circumstances, an inflator/deflator would be applied to the licence lease component of the index with the intention of returning the licence value to the target level.
 - Rising licence values effectively means fares are too high. This approach would therefore put some downward pressure on fares.
 - The further licence values increase, the greater would be the downward pressure on fares.

- Target the reserve price for OOTLs — this approach would provide some consistency between government policies in relation to licence releases and fares. Seeking to maintain licence values at around the reserve price would also provide some incentive for operators to bid for new OOTLs where there is rising demand.

As the weight on licence lease payments in the proposed cost index is relatively small (around 11 per cent), the deflator applied to this component would generally have a modest impact on cost index outcomes (unless a large inflator/deflator is applied).

- As such, this approach is likely to be less effective at reducing licence values than leaving nominal fares constant (which was implicitly the fare policy until the recent increase). For example, assuming that the other cost components increase by around 2.5 per cent per year, the licence component would need to be deflated by more than 20 per cent to offset price increases in other components, based on a weight of 11 per cent).
- Nevertheless, this approach should help to mitigate against the risk of persistent increases in licence values, as has previously been observed in some taxi areas. There is effectively an in-built mechanism to offset rising licence values; as licence values move further away from the target, the more downward pressure this component would exert on the cost index.

Consumer price index

Another option raised in stakeholder consultations was using the Consumer Price Index (CPI) instead of a taxi-specific cost index. This approach would maintain fares at a constant level in real terms.

- The advantage of this approach is simpler and would require fewer resources to administer.
- On the other hand:
 - the CPI is less likely to reflect actual changes in the cost of operating taxis
 - it is more difficult to address issues relating to licence values.

Balancing supply and demand

An approach that aims to balance supply and demand would examine key aspects of the performance of the industry to form judgements about whether there was excess demand for taxi services or excess supply of services. Examples of this have been used in other jurisdictions.

- From 2013 to 2015, IPART used a model of the taxi industry to provide guidance on fares and taxi licence releases in Sydney.¹¹ This model allowed for the types of interactions set out in chapter 3. For its 2018 review, IPART considered the presence

¹¹ IPART 2015, Sydney taxi fares to apply and new licences to be released from July 2015, https://www.ipart.nsw.gov.au/Home/Industries/Transport/Reviews/Taxi/Review-of-taxi-fares-to-apply-and-number-of-new-annual-taxi-licences-to-be-issued-in-Sydney-from-1-July-2015/24-Apr-2015-Final-Report-to-Transport-for-NSW/Final-Report-Sydney-taxi-fares-to-apply-and-new-li-1?timeline_id=11736.

of positive taxi lease values was sufficient to conclude that fares recovered more than the efficient costs of taxi services and therefore maintained constant nominal fares.¹²

- The ESC has considered supply and demand balance issues in its regulation of unbooked taxi fares in Melbourne. For example, in its 2020 decision, the ESC considered industry developments and changes in the costs of providing services. One reason for keeping fares unchanged was that there was no shortage in the supply of unbooked taxis.¹³ In its 2016 review, the ESC considered that the with industry reforms that had freed up taxi supply, it would need to adjust from focusing on costs to focusing on the balance of supply and demand.¹⁴ It stated that “Examining the balance of supply and demand for taxis at particular points of time helps inform us as to what should happen to maximum taxi fares — that is, whether they should go up, go down or stay the same.”

The logic of examining the balance of demand and supply is relatively straightforward. If there are lots of taxis available compared to demand, then this suggests fares should go down. On the other hand, if there are few taxis available relative to demand then this suggests fares should go up. This sort of approach lends itself better to understanding the direction of fares rather than the exact estimate of the increase or decrease.

Relevant indicators

Balancing supply and demand requires a different set of indicators than used for a cost index approach. It also tends to involve qualitative considerations and judgements, as much as the sort of pure quantitative information that can be used in estimating changes to costs. In general, the types of indicators a regulator would consider are set out in table 5.4. As noted above, in some instances this information has been developed into taxi industry models and in other cases used to inform judgements by regulator about whether fares should increase or decrease.

5.4 Indicators of the balance of demand and supply

Indicator	Insights
Taxi utilisation	<ul style="list-style-type: none"> ■ Where taxis have relatively low levels of utilisation (i.e. are driving around a lot of the time without a passenger) then this is an indication that supply exceeds demand, and fares could be reduced. ■ There may be other information available on utilisation, such as large queues of taxis waiting at airports or in ranks.

¹² IPART 2018, Review of taxi fares in NSW and taxi licences outside Sydney from 1 July 2018, <https://www.ipart.nsw.gov.au/sites/default/files/documents/final-report-taxi-fares-in-nsw-and-taxi-licences-outside-sydney-from-1-july-2018.pdf>.

¹³ ESC 2020, Unbooked taxi fare review 2020, Final Decision, <https://www.esc.vic.gov.au/transport/commercial-passenger-vehicles/commercial-passenger-vehicle-prices/maximum-taxi-fares/unbooked-taxi-fare-review-2020>.

¹⁴ ESC 2016, Taxi fare review 2016, Final Report, <https://www.esc.vic.gov.au/transport/commercial-passenger-vehicles/commercial-passenger-vehicle-prices/maximum-taxi-fares/taxi-fare-review-2016#tabs-container2>.

Indicator	Insights
Waiting times for customers	<ul style="list-style-type: none"> ▪ Where customers can obtain a taxi with minimal waiting time, then this is an indication that there is plentiful supply and fares could be reduced. ▪ Where customers have to wait a long time or cannot obtain a taxi service at all then this is an indication that demand exceeds supply and taxi fares could be increased.
Licence values	High and/or rising licence values would be an indicator that fares are set at a level where revenue is over-recovering costs of supply. All else equal, this would provide evidence that fares could be decreased.

Source: CIE.

A key conceptual challenge is that where supply is restricted because of regulation or other barriers to entry, it would not be appropriate to increase fares because demand exceeds supply. This is because increasing fares would not increase supply because of the noted barriers.

Data challenges

Data on indicators of demand and supply are not readily available to the Tasmanian Government. Our discussions have indicated that no data is systematically collected on utilisation of taxis, time on the road or waiting times. Potentially data on kilometres driven could be obtained from odometer readings required as part of vehicle inspection requirements, which is one indicator of time on the road. However, this data is not currently readily available and if taxis are also used as private vehicles may be misleading.

We have sought data from industry participants through the consultation process for some of the indicators set out above.

Some Tasmanian taxi markets are not at typical levels currently, because of the impacts of COVID-19. For example, in Hobart, supply is currently well in excess of demand and many taxis are not being operated.

6 *Recommended approach*

Process for reviewing regulated taxi fares

Regulated taxi fares should be formally reviewed (although not necessarily adjusted) regularly. Regular fare reviews have the following advantages over the current ad hoc approach.

- A regular timetable for fare reviews with decisions fully explained to industry stakeholders improves transparency and predictability for industry participants.
- Regular fare reviews would avoid the influence of industry lobbying in the timing of fare reviews and avoid the risk of asymmetrical fare changes (i.e. a fare review when fuel prices or other costs increase, but no fare changes when costs fall).
- Where fares are reviewed regularly, it is less likely that large fare changes will be needed.
 - Some industry stakeholders indicated a preference for more frequent incremental fare changes.
 - It is generally easier for both passengers and industry to adjust to smaller incremental fare adjustments over time, rather than large sudden changes.
- A formal transparent decision to keep fares unchanged over a period of time that is explained to industry stakeholders, should avoid the expectation of a later ‘catch up’ increase.

Approach to fare reviews

Fare reviews should broadly follow a best practice process used by regulators in other jurisdictions and the Tasmanian Regulator in other price determinations (see box 6.1 for an example of a best practice process), although this could be tailored depending on the level of industry engagement.

6.1 Example of best practice fare review process¹⁵

- **Notification of intent** — notify stakeholders and public through newsletters and forums, website and other communication channels
- **Engage on process and invite early input** — engage with the sector and other key stakeholders to contribute to thinking about the design of engagement:
 - request input to identify relevant issues (could be via online engagement or quick surveys on social media)
 - engage experts to provide specialist advice and potentially engage directly with regulated businesses and key stakeholder groups or peak bodies
- **Release issues paper for comment** — presents understanding of the key issues and perhaps offers preliminary options. May also:
 - call for submissions
 - hold stakeholder forums and public meetings (where appropriate)
 - consider online engagement promoted via social media.
- **Release draft decision for comment** — presents current thinking based on initial stakeholder input, research and analysis. Also at this stage:
 - call for further submissions
 - hold stakeholder/public meetings as required
 - test proposals using appropriate, targeted communication channels.
- **Release final decision** — responds to stakeholder input and includes expert analysis. Following final decision:
 - affected sectors and peak bodies/agencies involved are notified
 - decision published on website and contributors notified (where possible)
- **Advertise final decision** — final decision advertised in relevant publications.

Frequency of fare reviews

The frequency of fare reviews needs to balance the costs of conducting fare reviews for both the government and industry stakeholders (including the costs associated with adjusting meters when fares are changed) against the benefits associated with fares keeping up with cost changes and avoiding the need for large (albeit infrequent) fare changes.

- Some stakeholders indicated a preference for a fare review in some form every 1-2 years (to ensure that fares broadly keep up with inflation and to avoid large fare changes).
- The submission from the Transport Commission indicated a preference for a fare review every five years, citing the administrative burden associated with more

¹⁵ Essential Services Commission, 2018, Stakeholder Engagement Framework: Charter of Consultation and Regulatory Practice, pp. 12-13.

frequent reviews and the risk of consultation fatigue within the Tasmanian taxi industry.

We consider that 5 years is too long between fare changes. If taxi costs were to increase in line with general inflation, this would imply a 10-15 per cent fare increase at each review (assuming that taxi fares would be increased in line with inflation). To avoid the need for large fare changes, fares should be reviewed in some form at least every 2 years.

On the other hand, we recognise that a full fare review consistent with the best practice approach outlined above would require significant resources. Furthermore, interest in both this fare methodology review and the recent reserve price determination from many industry stakeholders has been underwhelming.

To balance these competing considerations, we propose the following approach.

- A major fare review should be conducted every 4-6 years on a clearly specified timetable.
 - A major review should broadly follow the best practice approach set out above, including public consultation.
 - A major review should:
 - ... include a detailed consideration of the appropriateness of current fare levels, based on a detailed review of recent developments in the various taxi markets around Tasmania
 - ... include a clear statement of the objectives of fare regulation (particularly in relation to licence values)
 - ... set out the approach to fare adjustments (or no change) in the period between reviews (including specifying how licence values will be treated)
 - ... clearly explain the reason for the choices made in a comprehensive report.
- A minor fare review should take place at least every 2 years on a clearly specified timetable.
 - This would essentially be a mechanical process (such as: updating the cost index or applying the CPI).
 - As the process is intended to be mechanical (and explained as part of the major review):
 - ... detailed public consultation would not be necessary
 - ... the public (including industry stakeholders) should be notified via a short (no more than a few pages) release that specifies the new maximum fares and sets out any calculations underpinning the fare change (based on the approach set out in the major review).
- Industry stakeholders should be notified of fare changes (or a decision not to change fares) well in advance of the fare change taking effect.

Who should review fares?

With relevant skills and statutory independence, the Regulator would be the most appropriate body to undertake fare reviews. However, we understand that under current

legislative arrangements, the fare review would be completed by the Transport Commission.

Perspectives on the current level of fares

The previous chapters emphasised the importance of assessing whether the current level of fares. Some perspectives on the current level of fares are discussed below. Some key points are as follows.

- Urban taxi fares in Tasmania are broadly in line with fares in mainland capital cities.
- The current level of taxi fares in Tasmania is at the same level as in the mid 1990s.
- Conditions vary significant across different taxi areas.

Comparison with other states and territories

A comparison of Tasmanian taxi fares with other states and territories provides one perspective on the current level of fares in Tasmania. Comparing taxi fares across jurisdictions is not straightforward for several reasons:

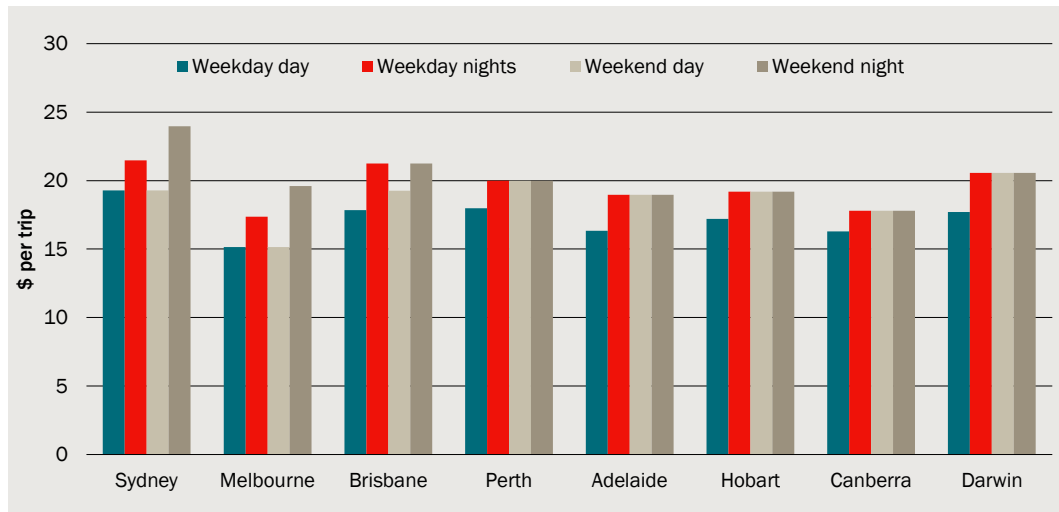
- the balance between different fare components varies across jurisdictions, meaning that different types of trips would produce different comparison
- different rates can apply at different times (and the times that these rates apply varies across jurisdictions)
- some types of charges (such as airport surcharges) apply in some states but not others.

Chart 6.2 compares estimated taxi fares across capital cities based on:

- a 5 Km trip with 5 minutes on waiting time
- 4 different time periods:
 - weekday daytime rates
 - weekday night-time rates
 - weekend daytime rates
 - weekend night-time rates.

In general, fares in Hobart (which also apply across most of Tasmania) are broadly in line with other capital cities.

6.2 Comparison of taxi fares



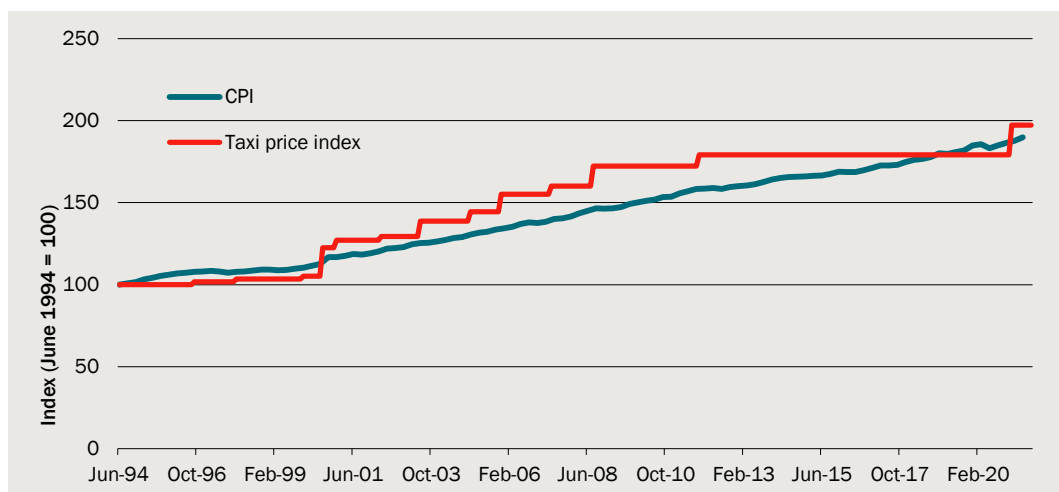
Note: Based on a 5 Km trip with 5 minutes on waiting time rates.

Data source: CIE estimates.

Longer-term perspective on fare changes

A longer-term perspective on fare changes relative to CPI is shown in chart 6.3. In general, taxi fares increased at a faster pace than general inflation during the 2000s. However, the recent long period of relative stability in nominal fares has meant that real fares are around the same level as in the mid-1990s.

6.3 Taxi fares v CPI inflation



Data source: Department of State Growth, ABS, CIE.

Perspectives on the level of fares across taxi areas

Based on the data available, we can make the following observations about the current level of fares in different taxi areas. In general, licence values (where available) provide a good indicator of fare levels relative to the efficient level.

- Positive licence values are an indicator that fares are above the efficient level in the relevant taxi area.
- Rising licence values indicate fares are moving further away from an efficient level.
- Falling licence values indicate fare are moving closer to an efficient level.
- Hobart taxi area

The available evidence suggests the Hobart taxi industry is currently operating well below capacity.

- There appears to be a significant number of licences not currently being used.
- Anecdotal evidence from stakeholders suggests that many vehicles are operating only 1 shift per day.

This reflects low demand due to both competition from ridesourcing, as well as the impacts of the COVID-19 pandemic. Although it is reasonable to expect that some demand will return as COVID-19-related restrictions are lifted, competition from ridesourcing is a permanent feature of the market.

In a competitive (unregulated) market, a negative demand shock would normally result on lower prices. As such, a fare increase in these conditions would risk exacerbating the current problems.

- Higher fares would reduce demand further, including losing more market share to ridesourcing.
- Although the own price elasticity of demand is not known, it is plausible that the reduction in the number of trips from a fare increase would outweigh the impact of the fare increase and result in lower industry revenue.

Launceston taxi area

Although the Launceston taxi area has also been affected by competition from ridesourcing and a reduction in demand relating to the COVID-19 pandemic, the impacts appear to be smaller than in Hobart.

An important observation in the Launceston market is that although perpetual licence values are significantly higher than the reserve price for an OOTL and until recently were rising, there has been limited uptake of OOTLs. A potential explanation is the lack of competition at the network level.

There has been a long-term upward trend in licence values in Launceston, although this has fallen recently, likely due to competition from ridesourcing. Nevertheless, licences retain significant value and there is scope to reduce fares.

Other metropolitan taxi areas

The other taxi areas currently on the urban fare schedule are:¹⁶

¹⁶ Although the West Tamar taxi area has an estimated population of around 24 500, around 60 per cent live in the area that overlaps with the Launceston taxi area.

- Devonport
- Burnie
- Perth
- Ulverstone
- West Tamar.

Observations for these taxi areas are as follows.

- In most of these taxi areas there have been insufficient licence transfers to observe trends in licence prices. The exception is Burnie where there has been a long-term downward trend in licence values.
- There has been some uptake of new OOTLs and/or WAT licences in most of these taxi areas (Devonport, Perth and Ulverstone), but no uptake in Burnie and West Tamar.
- The uptake of some OOTLs suggests that the value of licences could be around the reserve price in most of these areas.
- Although there are some ridesourcing vehicles registered in these taxi areas, competition from ridesourcing appears to be limited.
- These taxi areas are also likely to be less affected by the COVID-19 pandemic. Passengers using Devonport and Burnie airports have fallen by more than 70 per cent; however, these airports are only around 5 per cent of total airport passengers across all Tasmanian airports.

Licence values in these areas have some value, suggesting some scope for lower fares.

Taxis areas with no current licences

There are 6 taxis areas where there are no current licences:

- Glamorgan/Spring Bay North
- Glamorgan/Spring Bay South
- Kentish
- Bruny Island
- Central Highlands
- Flinders Island.

Around 3.2 per cent of Tasmania's population live in these taxi areas (table 6.4). These taxi areas tend to have low population density and few major towns.

6.4 Taxi areas with no current taxi licences

	Estimated population	Area	Average population density	Weighted average population density	Share of total population
	No.	Km ²	No. per Km ²	No. per Km ²	Per cent
Glamorgan/Spring Bay North	4 991	4 718	1.0	282.9	0.9
Kentish	6 393	1 156	5.3	229.5	1.2

	Estimated population	Area	Average population density	Weighted average population density	Share of total population
	No.	Km ²	No. per Km ²	No. per Km ²	Per cent
Glamorgan/Spring Bay South	1 964	1 057	1.7	345.0	0.4
Bruny Island	874	353	2.3	78.2	0.2
Central Highlands	2 166	7 982	0.3	88.5	0.4
Flinders Island	1 004	1 997	0.5	53.3	0.2
Total	17 391	17 264			3.2

Source: CIE estimates.

It is possible that taxi services are unviable in these taxi areas due to aspects of the regulatory framework, including the following.

- Although the reserve price for OOTLs is relatively low for these taxi areas, it is possible that the cost of obtaining a licence is acting as a barrier to entry in these taxi areas.
- The current maximum fare may be too low for taxi services to be viable in these areas. An increase in fares could support industry viability in these areas.

Alternatively, given the relatively small population of these taxi areas and the low population density, it is possible that taxi services would be unviable in these areas, even if unconstrained by regulation.

Raising fares in these taxi areas would appear to have limited downside, but could potentially allow a new provider to enter the market. One option would be to move all of these taxi areas onto the fare schedule that currently applies in Flinders Island and King Island.

Taxi areas with low taxi numbers

There are a further 8 taxi areas where there are 3 licences or less, including:¹⁷

- Break O'Day
- Dorset
- Tasman
- Meander Valley
- Penguin
- West Coast
- King Island.

There are an estimated 33 800 people who live in these taxi areas, around 6 per cent of Tasmania's total population.

¹⁷ West Tamar also has only 2 licences; however, as West Tamar is currently on the urban fare schedule, it was discussed above.

Although there are current licences in all of these taxi areas, there are no taxis with a garage address within the Dorset, Tasman or King Island taxi areas. This could indicate that there are no taxis currently operating in those areas (although it is possible that some taxis are currently operating in these areas, but the garage address is listed outside of these taxi areas) (table 6.5).

6.5 Taxi areas with 3 licences or less

	Estimated population	PTLs	OOTLs	Total licences	Registered vehicles
	No.	No.	No.	No.	No.
Break O'Day	6 787	3	0	3	2
Dorset	6 685	3	0	3	0
Tasman	2 479	2	1	3	0
Meander Valley	5 904	2	0	2	3
Penguin	6 215	2	0	2	2
West Coast	4 132	2	0	2	2
King Island	1 612	1	0	1	0
Total	33 814	15	1	16	9

Source: Department of State Growth, CIE estimates based on ABS data.

There have been few recent licence transfers in these taxi areas, except in Meander Valley where 2 licences were recently transferred at an average price \$16 000. Licence values in the other taxi areas are likely to be low. There has been no uptake of OOTLs in these areas (except 1 OOTL issued in Tasman in 2010), despite generally low reserve prices.

With a small number of taxis in these areas and low licence values, there would be a risk that decreasing fares in these taxi areas could cause taxi services that are currently operating to become unviable (or alternatively, discourage licences that are currently unused from being reactivated).

Other taxi areas

The remaining taxi areas are:

- New Norfolk
- Huon Valley
- George Town
- Circular Head.

Around 48 600 people live within these taxi areas, around 9 per cent of Tasmania's population (table 6.6). These taxi areas are mostly within a relatively close proximity of Hobart or Launceston (except Circular Head).

6.6 Other taxi areas

	Estimated population	PTLs	OOTLs	Total licences	Registered taxis
	No.	No.	No.	No.	No.
New Norfolk	10 518	9	0	9	5
Huon Valley	22 853	5	3	8	2
George Town	7 117	5	0	5	6
Circular Head	8 152	5	0	5	2
Total	48 640	24	3	27	15

Source: Department of State Growth, CIE estimates based on ABS data.

There are several registered ridesourcing vehicles with a garage address within these taxi areas (except George Town) and it appears that a significant number of the licences in these taxi areas may not be in use. However, this may partly reflect temporary COVID-19-related factors.

If there is competition from ridesourcing, raising taxi fares could risk losing market share to ridesourcing (as per Hobart and Launceston).

Recommended approach to fare regulation

At a minimum, the fare methodology should seek to avoid moving fares further away from the efficient level (implying rising licence values) and preferably, move them closer over time.

Key elements of a fare setting methodology therefore include:

- an assessment of the level of fares based on the evidence available and identifying the appropriate direction of fares (in real terms) based on the government's objectives
- identifying an approach to adjusting fares toward the preferred level.

Assessing the level of fares

A key risk with any 'mechanical' approach to fare setting is that over time, fares can progressively move further away from the efficient level (as has previously been observed in some Tasmanian taxi areas). It is therefore critical that the level of fares (relative to the efficient level) is periodically assessed against the government's objectives.

Any assessment as to whether fares are at an appropriate level will depend on the objectives of fare regulation and the weight placed on different outcomes. As discussed above, the objectives of fare regulation are not clearly specified.

- If the objective of fare regulation is to move fares closer to efficient costs (which is generally the objective of fare regulation in other regulated industries), this implies reducing fares to a level where licence values are close to zero.
- However, if other factors (including waiting times for consumers and some consideration of whether reducing licence values is fair on licence owners) are taken into account, the assessment of the current level of fares will be significantly different.

For example, this may involve keeping fares constant in nominal terms because licence values are positive, but monitoring waiting times to ensure that consumer experiences do not fall below an acceptable or desired level.

Key points from the above analysis in relation to fare levels are as follows.

- Licences generally have a significant value in all of the urban taxi areas, indicating scope for fares to move closer to an efficient level.
- There are 8 taxi areas where there do not appear to be any taxis operating (i.e. there are no current licences or there are no taxis with a garage address within the taxi area). This potentially indicates fares are too low for taxi services to be viable in these areas.
- In the remaining taxi areas, licence transfers are relatively infrequent and therefore information on licence values is limited. Furthermore, in many of these taxi areas, there are relatively few licences, so reducing fares in real terms could jeopardise the viability of the industry.

Changing fare levels

Where fares are assessed to have gotten out of alignment with what is considered to be an appropriate level, the level of fares may need to be reset. In these circumstances, we recommend that this transition occurs over time.

Taxi cost index or constant nominal fares

The approach to transitioning fares to a more appropriate level set out in the draft report was as follows.

- Where fares are considered to be higher than what has been assessed as appropriate (based on the Government's objectives) fares should be held constant in nominal terms (i.e. fares should be reduced in real terms through inflation). The advantages of deflating real fares through holding nominal fares constant include:
 - There is a general preference for small incremental changes (see above)
 - There are costs associated with re-setting taxi meters that could be avoided through keeping nominal fares constant
 - In most Tasmanian taxi areas, licence values (an indicator of excess profits) are relatively modest, compared with licence values that have been observed in other Australian taxi markets. As such, there is no clear need for a more aggressive approach.
- Where fares are at a broadly appropriate level, the taxi cost index should be applied (with no inflator applied to the licence lease component).

Based on this approach, the above analysis implies that at the next fare review (unless circumstances change):

- Urban fares should be held constant in nominal terms
- The taxi cost index should be applied to the fare schedule in other taxi areas
- There is a case to raise fares in taxi areas where no taxi are operating.

- There is no clear basis for determining the magnitude of any fare increase and taxi services may not be a financially viable business in some areas at any price.
- One approach could involve moving these taxi areas onto the fare schedule that currently applies on Flinders Island and King Island

Reducing nominal fares may be a more appropriate policy setting if these factors change, such as if licence values increased substantially.

Adjusting licence values within the Taxi cost index

To a significant extent, the above approach relies on subjective judgements. However, there appears to be an appetite for a more formal approach.

Applying a deflator to the licence lease component of the Taxi cost index to try to move licence values towards a target level that aligns with the Government's objectives provides a more formal approach that should deliver broadly similar outcomes over time. That said, determining a target level for licence values and the transition towards the target level still requires some subjective judgement.

We suggest a target of keeping licence values around the reserve price for OOTLs would align the government's fare and licence release policy and be an appropriate balance between competing priorities. However, this is ultimately a choice to be made by the Government.

Wheelchair accessible taxis

The Terms of Reference require that fares for wheelchair passengers are aligned with non-wheelchair passengers. Currently, fares for wheelchair passengers are significantly higher than non-wheelchair passengers:

- the flag fall is around 36 per cent higher
- the variable fare components are around 14 per cent higher.

There is a risk that reducing fares for wheelchair passengers to the same level as non-wheelchair passengers could reduce the availability of WATs. The following observations suggest that the viability of WATs may be tenuous:

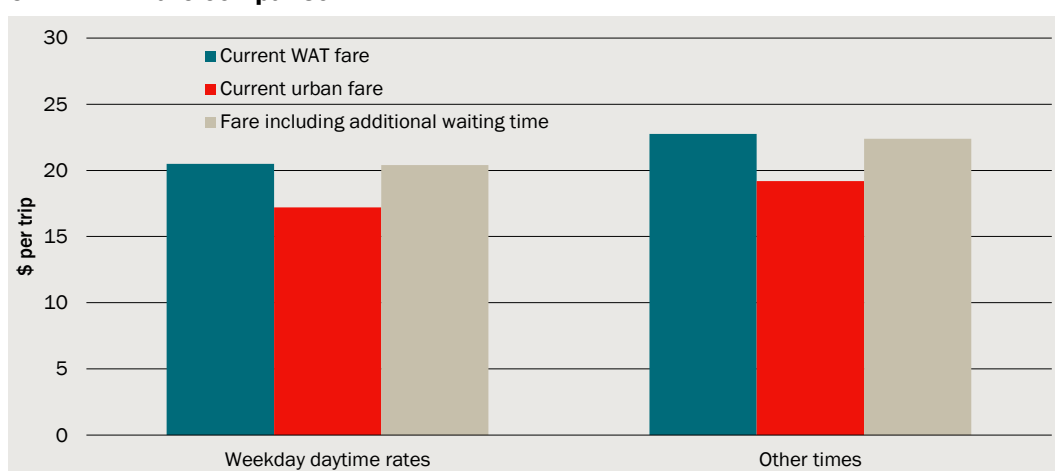
- There are current WAT licences in only 4 taxi areas: Hobart, Launceston, Devonport and Ulverstone (although these taxi areas include around two-thirds of Tasmania's population).
- Although there has been a net increase in the number of WAT licences by around 40 per cent since 2009, there has been a high rate of 'churn'. Of all WAT licences that have been on issue since 2009, around 37 per cent have been cancelled, suspended or lapse.
- There currently appears to be 9 WAT licences that are not currently in use.

Based on an (approximately) average trip (5 Km and 5 minutes on waiting time rates), moving from the current WAT fare schedule to the current urban fare schedule would reduce the fare by approximately 16 per cent (chart 6.7).

However, under new regulatory arrangements, the driver will be able to activate the meter when the passenger presents for boarding. are allowed to start the metre when the passenger presents for boarding. This means that the time taken to load the WAT passenger would be included in the fare on waiting time rates.

The average time taken to load a wheelchair passenger is not known. However, if the time to load a wheelchair passenger is around 5 minutes, the fare for the average trip would be only around 1 per cent lower (depending on the kilometre rate that applies at the time).

6.7 WAT fare comparison



Note: Based on a 5 Km trip with 5 minutes on waiting time rates.

Data source: CIE estimates.

Although the above analysis would depend on the average loading time and would vary across different types of trips (based on the assumed 5 minute loading time, the fare for shorter than average trips could be higher under the new arrangements, while the fare for longer-than-average trips would be lower), this analysis suggests that WAT revenue — and therefore viability — may not be significantly affected by the proposed change.

A further reform that could improve the viability of WATs is the relaxation of the requirement that an operator must buy a new vehicle to operate a WAT. This could potentially reduce the cost of a WAT vehicle from around \$70 000 to as low as \$12 000.¹⁸

As a more general point, adjusting the level of fares is a blunt and inefficient approach to encouraging additional uptake of WAT licences. WAT licences are around 11 per cent of total current taxi licences in Tasmania (and not all WAT passengers are wheelchair users). Raising the fares that apply to all taxi users to target a relatively small share of the market is likely to move standard fare further away from an efficient level.

¹⁸ Office of the Tasmanian Economic Regulator, *Investigation into the Reserve Prices of Owner-Operator Taxi Licences: 1 December 2021 to 31 December 2025*, Draft Report and Price Determination, p. 7.

If encouraging greater uptake of WATs is an objective of the Tasmanian Government, a more targeted (and therefore more efficient) approach would be to increase the existing subsidies that apply to WAT passengers.

Fare structure

There is no evidence to support a change to the current fare structure. As discussed previously, there is insufficient data available to estimate the optimal balance between the various fare components.

All stakeholders that participated in consultations felt the current balance was appropriate and there was no support for an adjustment to the current fare structure.

A Reweighting the taxi cost index

A cost index requires specification of the items to be included in the cost index and the weights attached to each item. This chapter identifies the main cost items for providing taxi services, estimates these costs in order to determine weights for each item, and recommends which of these should be separately included in the cost index.

Cost components of providing taxi services

The main cost components of providing taxi services are set out in table A.1. Plate leases are a cost facing operators but are not a resource cost, as discussed earlier in the report.

Note that operators may not bear these costs directly, with some networks providing a vehicle, equipment (such as the in-vehicle camera), maintenance, insurance and other inclusions on-top of the radio room service itself. That is, operators pay networks a higher fee reflecting the radio room service plus any inclusions.

A.1 Taxi cost categories

Costs that are (largely) fixed	Variable costs
Radio room/network costs	Driver labour
Vehicle costs (including fit-out and equipment)	Workers Compensation costs
Registration, including Motor Tax and Motor Accident Insurance Board (MAIB) fee	Fuel
Operator labour	Servicing, maintenance and repairs
Plate leases (not an efficient cost) and twice-annual inspections	Cleaning

Source: CIE.

Weights of each cost item

We estimate costs of providing taxi services in Tasmania for the purpose of developing a taxi cost index to support fare-setting.

We have obtained estimates of cost items through a series of consultations with Tasmanian taxi operators and networks, together with desktop research to obtain publicly available costs such as registration and MAIB costs.

The data obtained through these consultations is also cross-checked against the following:

- The taxi cost model developed for Tasmania by the CIE for the previous taxi fare review in 2013.¹⁹
- Unpublished cost modelling for Tasmania supplied by The Office of the Tasmanian Economic Regulator to the CIE, which is current as at 2019, and
- A taxi cost model for NSW developed by the CIE based on a survey of taxi drivers in 2013.

The values from this cost modelling are escalated using inflators where appropriate to facilitate comparison.

The estimated average costs of providing taxi services in Hobart and Launceston are shown in table A.2. These costs are current estimates based on current supply and demand conditions, which have been affected by falls in airport and tourist travel demand due to COVID-19.

Note that the level of driver labour costs is higher for WAT vehicles in this cost model, which reflects drivers still receiving 50 per cent of the farebox. However, we have not been able to obtain data to support this assumption, and it may be instead that driver labour for WATs is the same as driver labour for standard taxis. Given that the focus is on obtaining cost weights for standard taxis, we have not sought to test this assumption further at this stage.

A.2 Estimated cost of providing taxi services under current market conditions

Cost category	Hobart	Hobart	Launceston	Launceston
	Standard	WAT	Standard	WAT
	\$/year	\$/year	\$/year	\$/year
Vehicle including stamp duty	3 386	11 123	4 294	14 104
Registration, Motor tax, and MAIB	1 545	1 545	1 546	1 546
Network fees	7 332	7 332	8 320	8 320
Operator labour	6 552	6 552	6 552	6 552
Servicing, maintenance and repairs	5 000	5 000	6 760	6 760
Workers compensation	1 908	2 539	2 429	3 095
Inspections	360	360	360	360
Fuel	3 122	7 860	6 628	10 851
Comprehensive insurance	0	0	0	0
Licence lease	2 600	0	3 600	0
Driver labour	31 805	42 310	40 489	51 588
Total	63 610	84 620	80 978	103 176

Source: Tasmanian taxi industry consultations, CIE.

¹⁹ The CIE, 2013, *Setting taxi fares in Tasmania*, prepared for the Office of the Tasmanian Regulator, April 2013.

The cost weights based on these costs are set out for the major taxi areas in table A.3. Cost weights are slightly different for standard taxis between Hobart and Launceston, mainly reflecting:

- lower network fees in Hobart, and
- higher annualised vehicle costs in Launceston, reflecting consultations that suggested vehicles are turned over more regularly in Launceston than in Hobart.

A.3 Estimated cost weights under current market conditions

Cost categories	Hobart	Hobart	Launceston	Launceston
	Standard	WAT	Standard	WAT
	Per cent	Per cent	Per cent	Per cent
Vehicle including stamp duty	5.3	13.1	5.3	13.7
Registration, Motor tax, and MAIB	2.4	1.8	1.9	1.5
Network fees	11.5	8.7	10.3	8.1
Operator labour	10.3	7.7	8.1	6.4
Servicing, maintenance and repairs	7.9	5.9	8.3	6.6
Workers compensation	3.0	3.0	3.0	3.0
Inspections	0.6	0.4	0.4	0.3
Fuel	4.9	9.3	8.2	10.5
Comprehensive insurance	0.0	0.0	0.0	0.0
Licence lease	4.1	0.0	4.4	0.0
Driver labour	50.0	50.0	50.0	50.0
Total costs	100.0	100.0	100.0	100.0

Note: These weights are calculated based on dividing the cost of each category by the total cost in table A.2.

Source: CIE.

The tables above show only major cost items. There are a number of smaller cost items related to driver training, cleaning, uniforms, accreditation etc. These are excluded for the purposes of the cost index although we acknowledge these to be real costs either borne by drivers or operators. It is not necessary to include these in the cost index as we are focused on cost weights and these minor items will not materially change the weights.

Alternative post-COVID cost estimates

The outlook for demand for taxis is more uncertain than in previous years. The COVID-19 pandemic stifled commuting, business, recreational and tourism travel demand. As a result, licence lease fees fell dramatically, trip demand and revenue fell, and many taxis ceased operation.

These impacts are likely to be largely temporary. As vaccination rates increase and COVID-19-related restrictions are lifted, demand (including demand for airport trips and other tourist demand) and therefore revenue is likely to increase from current levels, undoing some or all of the fall in lease fees.

Importantly, current conditions in the taxi market have already recovered to some extent from the negative shocks revenue during the COVID-19 pandemic. For example, licence lease fees reduced to zero, but have partly recovered.

To assess what costs would be under a return to conditions for the taxi market that are similar to pre-COVID conditions, we asked stakeholders about lease fees and demand both now and at other points before and during the COVID-19 pandemic.

Based on information gathered from consultations, we have estimated the cost of providing taxi services under pre-COVID conditions for the taxi market (table A.4), and estimated the price weights based on these costs (table A.5). For this modelling, we assume that a return to pre-COVID conditions results in:

- Increases in lease fees by \$500-600 per month, and
- Increases in distance travelled per annum from 50 000 to 70 000 kilometres for Hobart and from 60 000 to 90 000 for Launceston.

These shifts both increase the cost of operating taxis, with increased distance travelled reflecting more intense utilisation of taxis such as a greater share of taxis being 'double-shifted' each day.

A.4 Estimated total cost of providing taxi services under post-COVID conditions

Cost category	Hobart	Hobart	Launceston	Launceston
	Standard	WAT	Standard	WAT
	\$/year	\$/year	\$/year	\$/year
Vehicle including stamp duty	3 386	11 123	4 294	14 104
Registration, Motor tax, and MAIB	1 545	1 545	1 546	1 546
Network fees	7 332	7 332	8 320	8 320
Operator labour	6 552	6 552	6 552	6 552
Servicing, maintenance and repairs	5 000	5 000	6 760	6 760
Workers compensation	2 435	2 739	3 024	3 442
Inspections	360	360	360	360
Fuel	4 371	11 004	9 942	16 277
Comprehensive insurance	0	0	0	0
Licence lease	9 600	0	9 600	0
Driver labour	40 580	45 655	50 397	57 360
Total	81 161	91 309	100 795	114 720

Source: Tasmanian taxi industry consultations, CIE.

A.5 Estimated cost weights under post-COVID conditions

Cost categories	Hobart	Hobart	Launceston	Launceston
	Standard	WAT	Standard	WAT
	Per cent	Per cent	Per cent	Per cent
Vehicle including stamp duty	4.2	12.2	4.3	12.3
Registration, Motor tax, and MAIB	1.9	1.7	1.5	1.3

Cost categories	Hobart	Hobart	Launceston	Launceston
	Standard	WAT	Standard	WAT
	Per cent	Per cent	Per cent	Per cent
Network fees	9.0	8.0	8.3	7.3
Operator labour	8.1	7.2	6.5	5.7
Servicing, maintenance and repairs	6.2	5.5	6.7	5.9
Workers compensation	3.0	3.0	3.0	3.0
Inspections	0.4	0.4	0.4	0.3
Fuel	5.4	12.1	9.9	14.2
Comprehensive insurance	0.0	0.0	0.0	0.0
Licence lease	11.8	0.0	9.5	0.0
Driver labour	50.0	50.0	50.0	50.0
Total costs	100.0	100.0	100.0	100.0

Note: These weights are calculated based on dividing the cost of each category by the total cost in table A.4.

Source: CIE.

Items to include in a cost index

It is important that all major costs that the industry bears are included in a cost index so that the weights of other costs are not distorted. For example, if labour costs are not included in the index then this gives a far higher weight to fuel than if labour costs are included. This would mean that changes in the cost index are less likely to reflect actual changes in the cost of operating a taxi, which is the objective of constructing the index in the first place. Minor cost items would have a very small weighting and are therefore highly unlikely to have a significant impact on the overall change in the cost index. These items can therefore be excluded from the cost index.

As discussed previously, licence plate-related costs are currently excluded from the cost index on the grounds that their inclusion creates circularity in the fare-setting process. This is a legitimate concern; the value of a licence plate depends on fares, while the inclusion of licence plate costs in the cost index could potentially mean that fares also depend on movements in licence plate costs. However, deflating the licence plate component of the index using a pre-specified deflator that is independent of actual movements in licence plate lease costs can ensure that there is no feedback from an increase in licence plate lease costs back into higher fares. Furthermore, ignoring the issue of industry rents in the construction of a cost index does not mean the issue disappears in reality. It is better to explicitly recognise the presence of rents in current fares and address the issue transparently.

The 50/50 revenue split between operators and drivers that is prevalent across the industry has been used as a justification for considering only operator costs and excluding driver costs. By doing this, the impact of any increase or decrease in operator costs is doubled. It is argued that this enables operators to recover their part of the cost, as they allocate half of the cost increase (or decrease) to drivers. The 50/50 arrangement is not regulated. While in practice it may be the case that this arrangement is persistent, it is not clear why consumers should be paying twice for cost increases (or facing double the

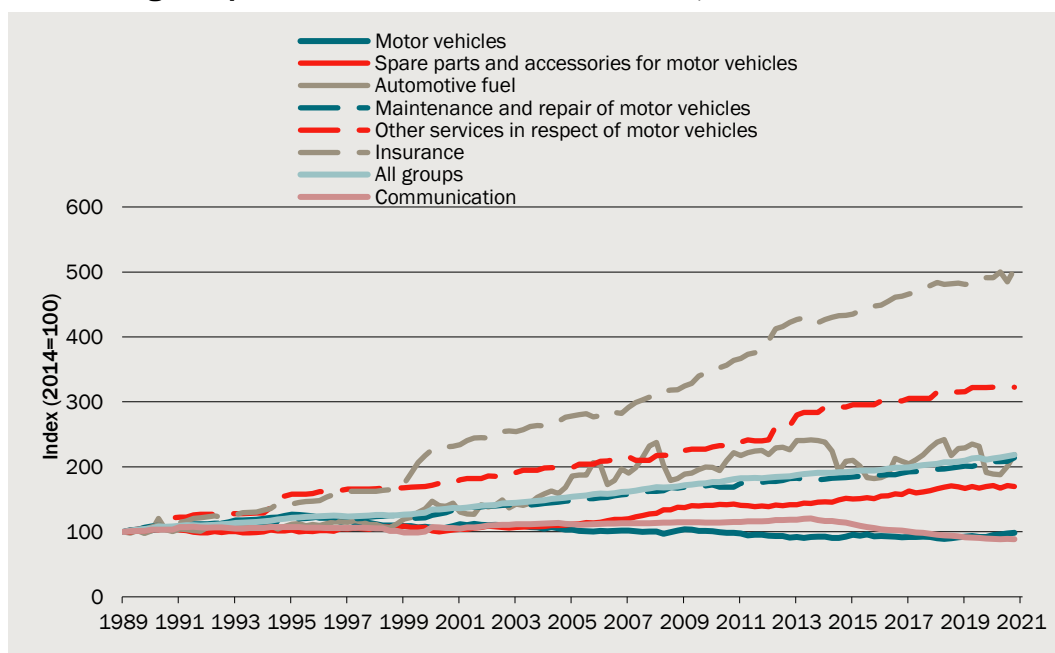
reduction in fares for price decreases). It is the obligation of drivers and operators to make and change these arrangements to reflect the changes in costs. Instead, all cost items should be included and inflated by the change in costs. If, at the end of the review period, the 50/50 arrangement still predominates then weights would be readjusted to reflect this.

While all major costs should be included, they do not necessarily have to be included separately. A cost index should include costs separately where these move differently to general prices in the economy. This means that cost items should be separately included where they:

- change on average in a different way to general prices — for example, motor vehicle prices decreased over the last 20 years compared to general consumer prices, which have increased. Insurance prices have increased far more quickly than general prices, while motor vehicle prices have remained almost constant; and
- are more volatile than general prices — for example, fuel prices are far more volatile than other prices.

Chart A.6 shows the changes in major cost items relevant for taxis and for which is a measure in the Consumer Price Index, Hobart (CPI). Relative to the All Groups CPI, which measures price changes for a bundle of products, the most different price changes have been insurance, motor vehicles and the ‘other services in respect of motor vehicles’ category, which may include services such as cleaning. Communication costs are the only cost category that have fallen in recent years rather than increased, but this index may be a proxy for change in radio room prices.

A.6 Changes in prices based on Consumer Price Index, Hobart



Data source: ABS Consumer Price Index.

The average change in each cost item with an inflator in the Consumer Price Index is shown in table A.7 for the past 10 years and the past 20 years. The standard deviation is shown alongside each average.

- Motor vehicle costs and insurance should be separately included, as these items have historically averaged different growth rates to the All Groups CPI. Hence it would be expected that they will move differently in the future.
- Fuel costs should be separately included because they are far more volatile than other cost items, with a standard deviation of the annual change of 10.8 per cent over the past 10 years.
- Communication costs have fallen in recent years, which may be a useful proxy for change in radio room prices.
- Labour costs typically increase more quickly than consumer prices and are very stable. Historically higher growth has reflected the higher prices for items that Australians produce relative to the items that we consume, with slower growth in wages in recent years potentially reflecting a fall in productivity growth.

A.7 Historical movements in price items

Price item	Last 10 years		Last 20 years	
	Average annual change	Standard deviation of annual change	Average annual change	Standard deviation of annual change
	Per cent	Per cent	Per cent	Per cent
Motor vehicles	0.1	2.9	-0.5	2.5
Spare parts and accessories for motor vehicles	1.8	2.1	2.6	2.5
Automotive fuel	0.5	10.8	2.8	11.8
Maintenance and repair of motor vehicles	2.4	1.4	2.4	1.5
Other services in respect of motor vehicles	3.4	2.8	3.1	2.3
Insurance	3.4	2.8	4.0	2.7
Communication	-2.6	2.7	-0.8	2.7
WPI	2.5	0.3	3.1	0.8
All groups	1.9	0.9	2.4	0.9

Note: Where an index is not available for 20 years (such as WPI) the 20 year figure captures the length of the series.

Source: ABS Consumer Price Index Hobart; ABS Wage Price Index Tasmania .

Plate lease payments also have low correlation with movements in the CPI, reflecting the demand for taxi services and the number of taxi plates made available. This is not an economic cost and reflects a deviation from 'efficient costs' (one of the matters the Regulator is required to consider under the Terms of Reference). Applying an inflator to licence leases would move fares further away from the efficient level. It is therefore not appropriate to apply an inflator for this cost category.

The cost index is designed to maintain licence values constant (although for various reasons, this will not necessarily be achieved in practice).

Reweighting the cost index

The weights in the cost index will not stay the same through time. The cost index reflects a constant quantity of inputs.²⁰As the prices of inputs change so do the shares of each input in total costs.

The method for reweighting as inflators are applied is mechanical. The weight for each item is multiplied by its inflator. These adjusted weights are then divided by the sum of the adjusted weights to give a new set of weights. For example:

- Suppose there were two cost items, fuel and labour, with a weight of 20 per cent and 80 per cent respectively.
- The price of fuel increased by 25 per cent and labour increased by 10 per cent.
- Then the adjusted weight for fuel is 20 per cent * 1.25 = 25 per cent and the adjusted weight for labour is 80 per cent * 1.1 = 88 per cent. The sum of the adjusted weights is 113 per cent.
- The final revised weight for fuel is 25 per cent / 113 per cent = 22 per cent. The final revised weight for labour is 88 per cent / 113 per cent = 78 per cent. That is, because the fuel price has increased relatively more it now makes up a higher share of the cost index.

Periodically, the cost index should be reweighted by collecting data from industry. This should be done because the way the industry operates is likely to change through time, including in response to changes in the price of inputs.

²⁰ Technically, it is a Laspeyres Price Index.

B Inflaters to apply price changes to the cost index

A cost index requires inflators for each cost item that is separately identified. Each inflator measures the change in the price of a cost item. This chapter considers the options for inflators.

Industry or independent?

There are two main options for choosing inflators for cost items:

- Independent publicly available estimates. These include ABS Consumer Price Index measures, official interest rate data and data collated on fuel prices.
- Quotes from industry. For example, obtaining a quote from networks on their network fees each year.

The choice between these options represents a trade-off, with disadvantages of each option shown in table B.1. The (major) disadvantage of independent estimates is that the independent measure may not align to the cost item being measured. For example, the motor vehicle component of the CPI captures all motor vehicles. The type of motor vehicles used to provide taxi services could be different to this mix. Further, taxi vehicles will often be purchased second hand. However, independent estimates are not subject to gaming by industry.

There are many disadvantages of using quotes from industry, as set out in table B.1. Reflecting these issues, we have found these to be far more volatile than independent estimates, as the exact specification of the cost item is difficult. For example, an insurance company will typically charge different insurance premiums depending on how far the vehicle drives, the history of the operator, the type and age of the vehicle and the level of insurance cover being provided. In practice, operators adopt many alternative approaches to the insurance cover they seek and the premiums that they are charged.

On balance, we consider that independent estimates should be preferred to industry quotes.

B.1 Disadvantages of each approach to inflators

Independent estimates	Quotes from industry
<ul style="list-style-type: none"> ▪ May not align well to the cost item being measured 	<ul style="list-style-type: none"> ▪ Quote requires specification of a particular type of service ▪ No guarantee that the quote accurately reflects prices offered, such as discounts ▪ Multiple suppliers for most items, so need to weight quotes

Independent estimates	Quotes from industry
	<ul style="list-style-type: none"> ▪ Administratively costly ▪ May be gamed, such as networks seeking to lock-in their price increase ▪ May not be adjusted for changes in quality

Source: CIE.

Inflators for each cost item

Motor vehicle costs

The annualised cost of motor vehicles reflects:

- the purchase price of motor vehicles;
- the financing cost of motor vehicles (this is equivalent to a return on capital if financed by the taxi operator paying in full for the vehicle);
- the number of years over which costs can be recovered; and
- the sale value of a vehicle when it is no longer used as a taxi, which we have assumed to be zero.

At any one time, taxis are providing services that have been purchased over the past 6-8 years, some with variable interest rate financing and others with fixed interest rate financing.

The purchase price and sale value of a vehicle can be inflated by using the ABS CPI, Motor Vehicles. The financing cost can be changed through using changes to Reserve Bank of Australia data on interest costs for business. This should focus on changes in interest costs rather than the level, which we expect to be higher than benchmark rates based on the consultations. These are then applied to the standard amortisation formula for the two periods.²¹ The initial purchase cost should be that used in the calculation of the initial weight.

Fuel costs

The Tasmanian taxi fleet consists of a mix of hybrid and petrol vehicles. Based on our consultations, almost all taxis in Hobart are now hybrid vehicles, while taxis in Launceston are only around 35 per cent hybrids. Fuel efficiency varies across vehicle types, being significantly lower for hybrids and higher for standard taxis using petrol such as Ford Falcons and Toyota Hiace vans often used as WATs (table B.2). We have applied fuel efficiency benchmarks for vehicles without any loading for worse efficiency when used as a taxi. assumed that taxis and non-taxi have the same

²¹ The standard amortisation formula is:

$$I_{MV} = \left[C_{MVP} - \frac{R}{(1+i)^6} \right] * i * \frac{(1+i)^6}{((1+i)^6 - 1)} - 1$$

Where C_{MVP} is the cost of a motor vehicle purchase, R is residual value and I is the interest rate.

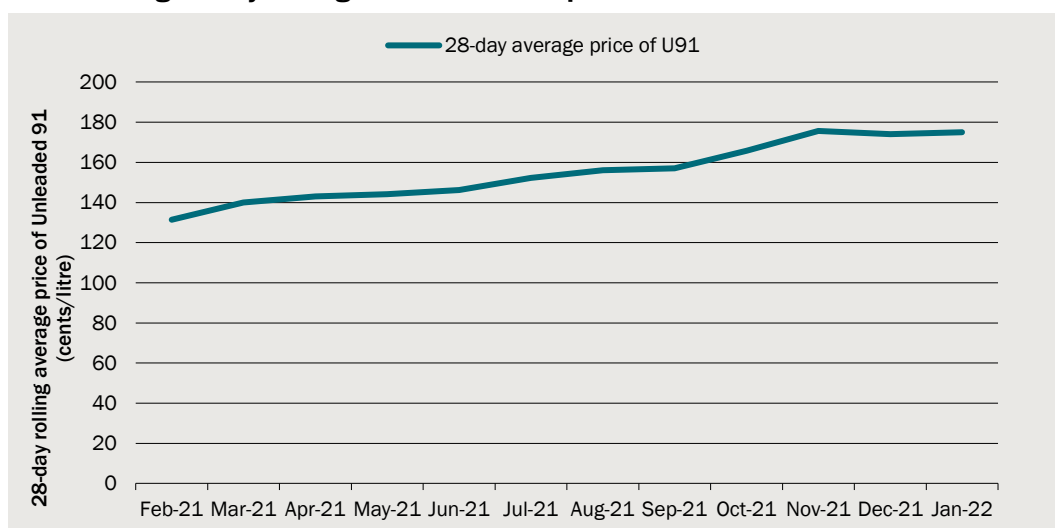
B.2 Fuel efficiency assumptions by vehicle type

Vehicle type	Fuel efficiency l/100km	Source
Camry	5.75	https://www.racv.com.au/royalauto/transport/reviews/toyota-camry-hybrid.html
Corolla	4.10	https://www.racq.com.au/cars-and-driving/cars/car-reviews/Toyota-Corolla-Hybrid
Ford Falcon	9.00	https://www.carsales.com.au/editorial/details/falcon-consumption-drops-nearly-10-per-cent-46598/
Toyota Hiace	12.40	https://www.carexpert.com.au/car-news/2021-toyota-hiace-price-and-specs

Source: CIE.

Fuel costs are volatile over time (recall chart A.6), but appear to be trending upwards over the past year (chart B.3).

B.3 Rolling 28-day average of Unleaded 91 price in Tasmania



Data source: Data extracted from Fuelcheck on 27 January 2021, available at: <https://www.fuelcheck.tas.gov.au/app/FuelPrice/Trend?fuelTypeCode=U91>, CIE.

There is evidence from the ACCC that fuel prices are higher in Launceston than in other large cities such as Hobart.²² ACCC state that this likely represents a lesser degree of competition in Launceston, and that retail margins are accordingly higher in the long-run. The extent of this difference was from 125.4 cents per litre in Launceston compared to 109.0 cents per litre in the five largest Australian cities.

Despite this difference in the level of fuel prices, we expect that price fluctuations will be correlated across different regions of Tasmania.²³ There is some evidence over the year

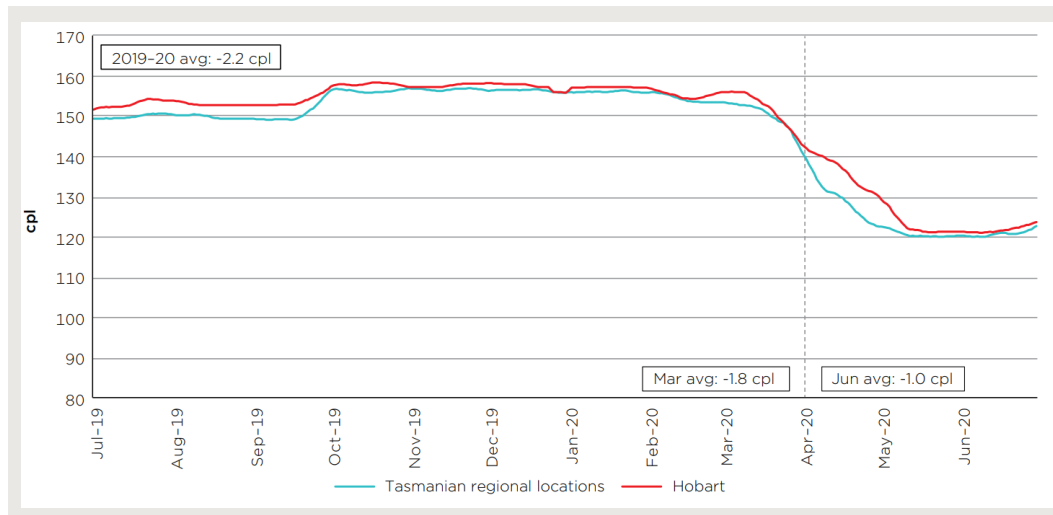
²² ACCC, 2020, *Report on the Australian Petroleum Market 2020*, p.12, available at:

https://www.accc.gov.au/system/files/20-27RPT_Petrol%2520Quarterly%2520Report%2520-%2520June%25202020_FA.pdf

²³ In The CIE (2013), this was supported by Fueltrac data suggesting that fuel prices around Tasmania were highly correlated. While this Fueltrac data is not publicly available to support the present analysis, we do not expect the correlation to have broken down since that analysis.

to June 2020 that fuel prices in Tasmanian regional areas were moving in a similar pattern (although not perfectly correlated) with prices in Hobart (chart B.4).

B.4 Seven-day rolling average petrol prices in Tasmanian regional areas and Hobart



Note: A seven-day rolling average price is the average of the current day's price and prices on the six previous days.

Data source: ACCC (2020) Report on the Australian petroleum market – June 2020, p.45, available at: https://www.accc.gov.au/system/files/20-27RPT_Petrol%2520Quarterly%2520Report%2520-%2520June%25202020_FA.pdf

Insurance costs

The ABS CPI measure for insurance covers general insurance, which includes both house insurance and motor vehicle insurance. (It excludes health insurance and life insurance.) This is the most closely linked product to taxi insurance services.

Radio room costs

The costs of providing a radio room include costs related to the building, electricity costs and communications costs. In the CIE (2013) we stated that

“There is the potential for radio room costs to decline substantially with new technology becoming available for linking taxi passengers with taxi drivers. This may occur either because of reductions in radio room fees or because fewer taxis choose to be part of networks.”²⁴

There is no obvious ABS inflator for radio room costs. Options include using communications or the all groups CPI. Over the past 10 years the communications component of the CPI (for Hobart) has fallen by 2.6 per cent per year on average compared to CPI All Groups increasing by an average of 1.9 per cent annually.

This inflator captures broad trends in communications pricing such as mobile phones and would reflect changes in the price of all inputs, such as labour, land, capital and

²⁴ The CIE, 2013, *Setting taxi fares in Tasmania*, available at: [https://www.economicregulator.tas.gov.au/Documents/Taxi%20Fare%20Inquiry%20CIE%20Report%20April%202013%20\(13%201756\).PDF](https://www.economicregulator.tas.gov.au/Documents/Taxi%20Fare%20Inquiry%20CIE%20Report%20April%202013%20(13%201756).PDF)

intermediate inputs, as well as changes in productivity from technological innovation and other sources.

In the CIE (2013) we estimated radio room costs to be \$7 200 per annum in Hobart, which compares to our current estimate of \$7 332. This represents a negligible increase of 0.2 per cent annually since 2013.

One reason why radio room prices may have remained roughly constant despite falls in broader communications prices is that there is less competition and therefore less innovation.

Labour costs

Labour comprises labour of operators/administration and labour of drivers. The actual labour component for drivers is determined as a share of revenue. A 50/50 split applies in Hobart and major regional areas, but we haven't been able to test this for all taxi areas.

The actual split of costs between drivers and operators appears to have been very durable, even though there is no regulatory requirement around cost sharing. Stakeholders consulted for this project were emphatic that even during the period of severely reduced demand due to COVID-19 there were no changes to the driver share of revenue. It appears that operators can alter cost shares at the margin through arrangements for who bears some costs, such as workers compensation.

The current cost index presumes that the cost sharing arrangements will continue and hence the index only measures operator costs. This effectively says that if there is a 10 per cent increase in operator costs, a 10 per cent increase in fares is required to cover operator costs, with drivers also benefitting.

We consider that it is not the role of the regulator to use fares to influence the share of revenues that goes to drivers, operators and other relevant services providers. These arrangements are not regulated and it is up to the industry to make whatever adjustments it considers necessary in response to changes in industry conditions. Whether these adjustments comprise changes in revenue shares, changes in allocation of costs (such as allocating part of fuel costs to drivers), shift bonuses (such as a driver receiving \$10 + 50 per cent) is up to the industry.

This necessitates that the labour cost component of the cost index should be inflated by some independent measure. The most widely used measure is the wage price index. Note that a labour cost measure requires some consideration of productivity adjustment as discussed in the next chapter.

Maintenance and repairs cost

The ABS measures changes in the cost of maintenance and repairs, published in the CPI release.

Timing and averaging of inflators

Information on price changes used in a cost index is lagged. That is, the cost changes measured are those from a previous period, applied to the next period. Cost changes can be measured as the average over a year or a change from specific points in time. We consider that it is better to use an average over a year to avoid volatility from using single data points, particularly for items such as fuel.

If a fare review was being conducted for a price change to occur on the 1 July then data would be available for the previous year to March. The inflator for each item should then be measured as the percentage change for the average of the year to March relative to a year earlier. For example, if the fare change was for 1 July 2022 and the data was quarterly then the inflator would be the average of index numbers for June 2021, September 2021, December 2021 and March 2022 divided by the average of the index numbers for June 2020, September 2020, December 2020 and March 2021.



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