

WACC Biannual Update

24 February 2023

1 Introduction

Every 6 months, we publish a financial market update to help our stakeholders understand and replicate our Weighted Average Cost of Capital (WACC) decisions. We also publish a spreadsheet containing a working copy of our WACC model. This update and the accompanying spreadsheet contain market data sampled to 31 January 2023.

2 Overview

This biannual update is published to inform stakeholders of current market conditions at the date of market observation, consistent with our standard WACC method. We periodically review our methodology, and we are commencing a review soon with the publishing of an issues paper in the coming months.

Since the last update in August 2022, the WACC estimate (real post-tax WACC based on an equity beta of 1 and a gearing ratio of 60%) has remained unchanged at 3.5% (Table 1). Figure 1 presents the real post-tax WACC since July 2019.

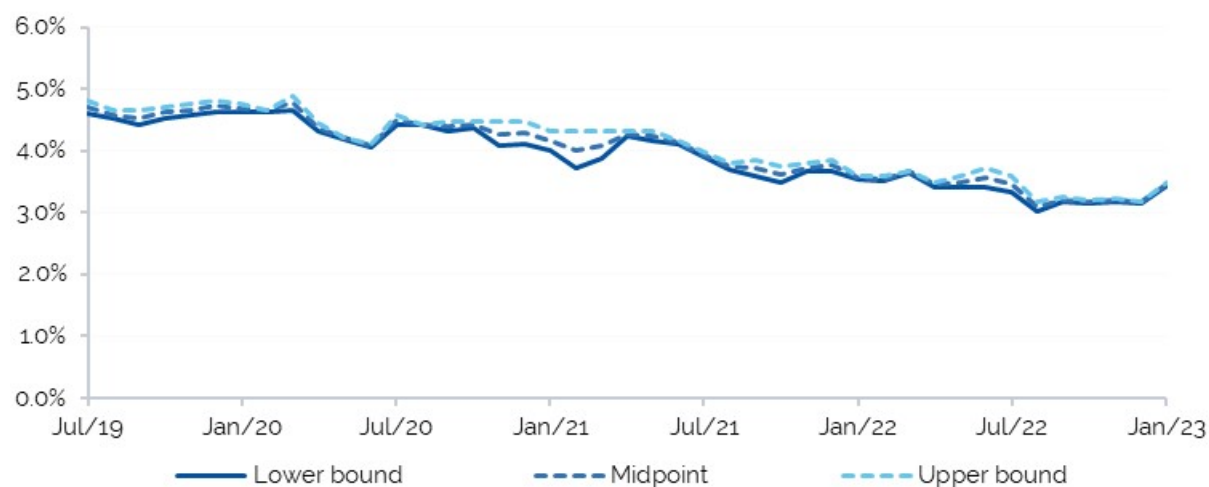
This biannual update is based on market data up to 31 January 2023. However, for price determinations we use the latest available market observations and estimate gearing and equity beta for estimating the WACC. We consult on our updated estimates in our draft reports before finalising our determinations.

The nominal post-tax WACC decreased by 20 basis points, but the inflation forecast decreased by 20 basis points, leading to the result that the real post-tax WACC remained unchanged.

The movement in the nominal WACC reflects movements in market interest rates, but the effect of recent rises is muted somewhat because we use trailing average calculations over 4 years for the current interest rates and over 10 years for the long-term average interest rates.

Our measure of inflation presented in this market update represents inflation expectations based on IPART's standard method, which may differ from instantaneous market inflation figures. Under our standard method, the inflation expectation is a geometric average of the RBA's 1-year forecast from the February 2023 Statement of Monetary Policy for the first year and the midpoint of the RBA's target range (i.e. 2.5%) thereafter.

Figure 1 Estimated real post-tax WACC midpoint and range based on an equity beta of 1 and a gearing ratio of 60%



Source: IPART analysis of Reserve Bank of Australia and Refinitiv data.

Table 1 summarises our estimates of the nominal and real post-tax WACC range and the midpoints. It also compares the current WACC estimates with those we published in the August 2022 update (the August 2022 update contains data sampled to 31 July 2022).

Table 2 summarises the underlying market-based WACC parameters over the same period.

Table 1 IPART's WACC range using an equity beta value of 1 and a gearing ratio of 60%

	Lower	Midpoint	Upper
31 July 2022			
Nominal post-tax	6.3%	6.5%	6.6%
Real post-tax	3.3%	3.5%	3.6%
31 January 2023			
Nominal post-tax	6.2%	6.3%	6.3%
Real post-tax	3.4%	3.5%	3.5%

Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

Table 2 Market-based WACC parameters

	Risk free rate	Cost of debt	Market risk premium	Inflation
31 July 2022				
Current	1.8%	4.2%	8.4%	2.9%
10 years	2.5%	4.9%	6.0%	2.9%
31 January 2023				
Current	1.9%	4.0%	7.7%	2.7%
10 years	2.5%	4.8%	6.0%	2.7%

Note: The current estimates are measured either over 40 trading days or 2 months, depending on their data source.

Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

Our calculation of the WACC can be found in the accompanying spreadsheet.^a At the parameter level, Table 2 shows that over the last 6 months:

- The current measure of the **risk-free rate** has increased by 10 basis points and the long-term (10-year) measure has remained constant.
- The current measure of the **cost of debt** has decreased by 20 basis points and the long-term measure has decreased by 10 basis points.
- The current measure of the **Market Risk Premium (MRP)** has decreased by 70 basis points. We do not update the long-term measure with changes in the market.
- The current measure of **inflation** has decreased by 20 basis points and the long-term measure has also decreased by 20 basis points.

2.1 Short-run Market Risk Premium (MRP)

To enhance the transparency of our WACC decisions, we publish our short-run estimates of the MRP. We base our current MRP estimate on the short-run estimates. Table 3 provides the short-run MRP estimate using our 6 measures of the MRP, reported to 2 decimal places.

Table 3 Short-run MRP

Estimation method	Estimate at 31 January 2023
Damodaran	7.20%
Bank of England (2002)	9.28%
Bank of England (2010)	7.34%
Refinitiv	7.10%
SFG Market indicator (mean)	8.34% ^b
SFG analysts implied method	7.43%
Short Run MRP	7.71%

Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

3 Industry analysis

Table 4 shows the industry-specific parameters that we have previously adopted for the industries we regulate.

^a Select an industry from the drop-down menu in the accompanying spreadsheet for industry-specific WACC estimates.

^b Actual earnings per share, dividend per share, book value per share, number of shares outstanding, and common shares outstanding for 2021-22 needed to estimate SFG's market indicator MRP were not yet available as at 17 August 2022. Therefore, we used data for 2020-21.

Table 4 Industry-specific WACC parameters

	Low	Equity beta Mid	High	Target term to maturity	Gearing ratio
Water	0.6	0.7	0.8	10 Years	60%
Transport					
Rail	0.8	0.9	1.0	10 Years	60%
Rail access	1.0	1.0	1.0	10 Years	45%
Bus (metro & outer metro)	0.7	0.9	1.0	10 Years	60%
Light rail	0.7	0.9	1.0	10 Years	60%
Ferries	0.8	0.9	1.0	10 Years	40% to 60%

Table 5 shows the 6-monthly WACC range and midpoint estimates over the last 2 years for the industries that we regulate.

Table 5 Regulated industries half-yearly real post-tax WACC ranges and midpoints from January 2021 to January 2023

	Jan-21	Jul-21	Jan-22	Jul-22	Jan-23
Water					
Upper bound	3.6%	3.2%	2.9%	2.6%	2.8%
Midpoint	3.3%	3.1%	2.7%	2.6%	2.7%
Lower bound	3.0%	2.9%	2.5%	2.6%	2.5%
Rail					
Upper bound	4.1%	3.7%	3.4%	3.3%	3.3%
Midpoint	3.9%	3.6%	3.3%	3.2%	3.2%
Lower bound	3.7%	3.6%	3.2%	3.1%	3.1%
Rail Access					
Upper bound	5.1%	5.2%	4.8%	4.7%	4.4%
Midpoint	4.9%	4.8%	4.5%	4.3%	4.2%
Lower bound	4.7%	4.4%	4.2%	4.0%	4.0%
Bus, Light Rail					
Upper bound	4.0%	3.6%	3.2%	3.1%	3.1%
Midpoint	3.7%	3.5%	3.1%	3.0%	3.1%
Lower bound	3.5%	3.4%	3.0%	3.0%	3.0%
Ferries					
Upper bound	4.4%	4.2%	3.8%	3.8%	3.6%
Midpoint	4.3%	4.1%	3.7%	3.6%	3.6%
Lower bound	4.2%	4.0%	3.7%	3.4%	3.6%

Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

Note 1: These WACC ranges are prepared on the basis that a business has completed the transition to and is using the trailing average cost of debt.

Note 2: For the water industry, we determine a WACC for Central Coast Council, Essential Energy, Hunter Water Corporation, Sydney Desalination Plant, Sydney Water Corporation, Water Administration Ministerial Corporation (WAMC), the Wentworth to Broken Hill Pipeline and WaterNSW (for the Murray-Darling Basin valleys, we apply the ACCC's WACC methodology prescribed under the Water Charge (Infrastructure) Rules 2010).

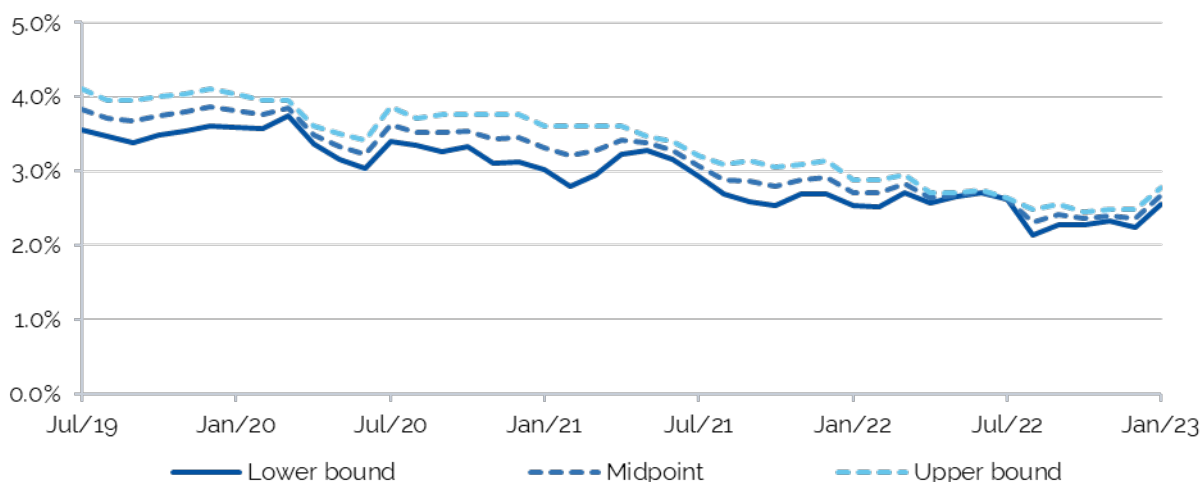
Note 3: For Opal fares refer to Maximum Opal fares 2020-2024 Final report February 2020. For rural and regional bus fares refer to Review of rural and regional bus fares from January 2021, Final report December 2020 and for rail access refer to Rate of return and remaining mine life 2019-2024 final report July 2019.

Note 4: Please note that the methodology and parameters in this note and spreadsheet do not pre-empt the outcome of IPART's future decisions. They should be used as an illustration of how our current methodology would be applied to the given parameter values. This is because at each price review, we assess the appropriate valuation for each WACC parameter. In some cases, we may depart from our standard industry parameter valuations taking account of the individual regulated business's circumstances.

3.1 Water

Figure 2 shows the 6-monthly WACC range and midpoint estimates since July 2019 for the water industry. The midpoint WACC for the water industry is 2.7%. In the August 2022 market update, we reported a midpoint WACC of 2.6% for the water industry.

Figure 2 Water industry real post-tax WACC midpoints and ranges



Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

3.2 Transport

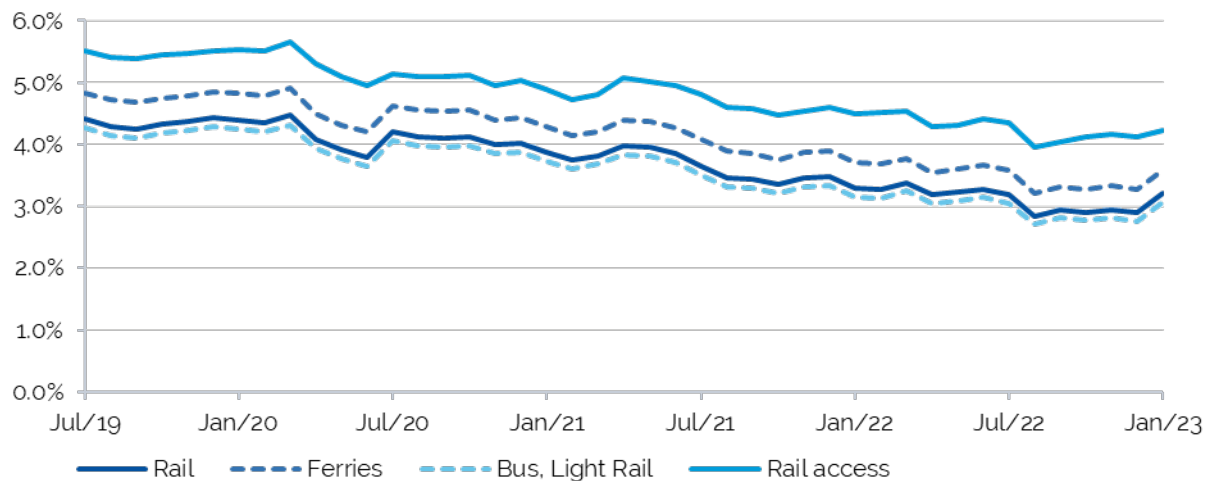
Figure 3 presents notional WACCs for public transport and rail access based on updated market parameters and inputs. In recent reviews IPART has not used the building block method to recommend Opal prices for rail, bus, light rail and ferries and therefore does not currently have a WACC embedded in those pricing decisions. However, we continue to present the real WACC estimates for those industries here for stakeholders who remain interested. For rail access reviews, we use a WACC in pricing decisions.

The WACC estimates presented here show the indicative WACCs for these industries if we were to estimate them as at 31 January 2023. They do not imply a change to any in-place pricing determinations or undertakings.

- The rail industry has a midpoint WACC of 3.2%. In the August 2022 market update, we reported a midpoint WACC of 3.2%.
- The bus and light rail industries have a midpoint WACC of 3.1%. In the August 2022 market update, we reported a midpoint WACC of 3.0%.

- The ferry industry has a midpoint WACC of 3.6%. In the August 2022 market update, we reported a midpoint WACC of 3.6%.
- The rail access industry has a midpoint WACC of 4.2%. In the August 2022 market update, we reported a midpoint WACC of 4.3%.

Figure 3 Transport industries real post-tax WACC midpoints

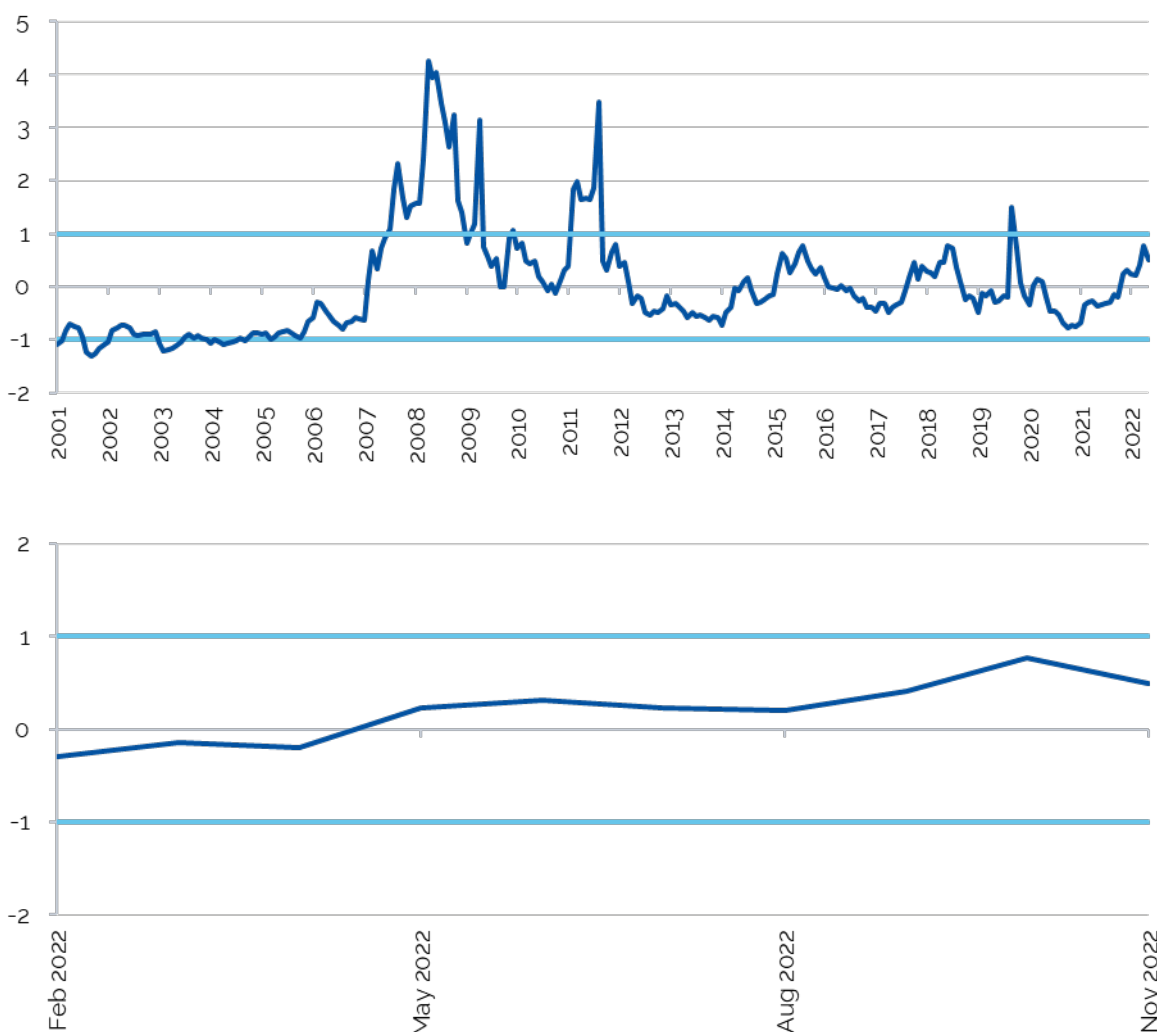


Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thomson Reuters) data.

4 Financial market uncertainty index

In our 2013 Final Report on the review of our WACC methodology, we developed an index to monitor financial market uncertainty. Our uncertainty index calculator and accompanying factsheet are available on our website. We have updated the uncertainty index to the end of November 2022.^c As shown in Figure 4, the uncertainty index is currently within one standard deviation of the long-term average value of zero. According to our WACC decision rule^d, we would use the midpoint WACC to estimate the return on capital invested by the regulated business.

Figure 4 IPART's uncertainty index



Source: IPART analysis of Reserve Bank of Australia and Refinitiv (formerly Thomson Reuters) data.

^c The index is updated to November 2022, not January 2023, because of the lack of the 3-monthly Australian overnight indexed swaps data from December 2022 onwards. This will be addressed in the next update in August 2023.

^d The WACC decision rule states that if the uncertainty index is within one standard deviation of the long term average of zero, then utilise the midpoint WACC. If the uncertainty index is greater than one standard deviation from the long term average of zero, consider moving away from the midpoint WACC.