WACC Biannual Update

August 2020

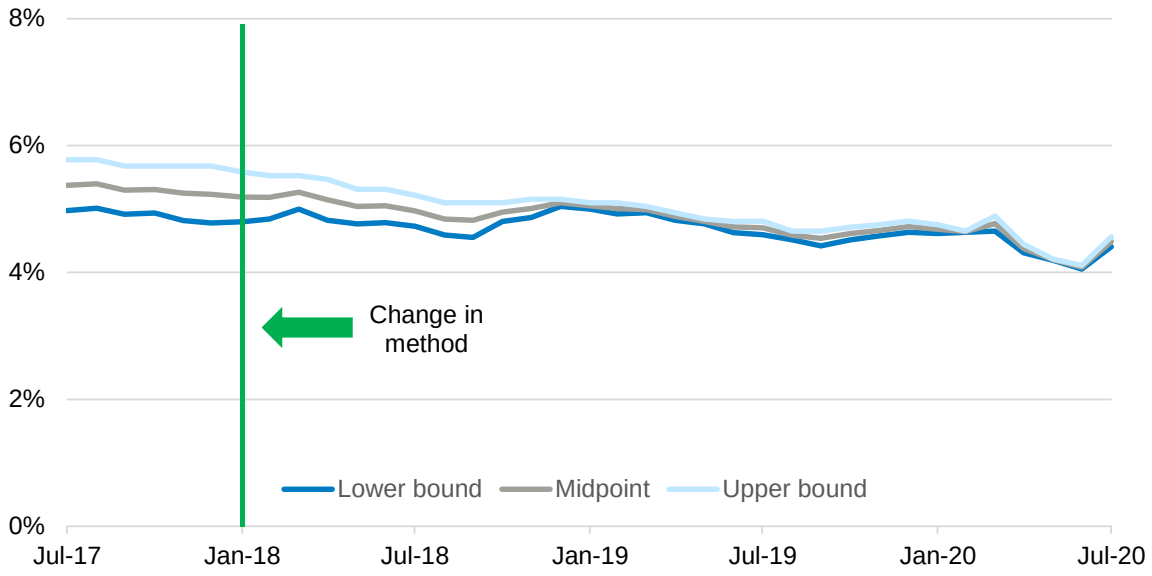
1 Introduction

Every six 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 July 2020.

2 Overview

Since the last update in February 2020, the WACC estimate (real post-tax WACC based on an equity beta of 1 and a gearing ratio of 60%) has decreased by 20 basis points to 4.5% (Table 1). Figure 1 presents the real post-tax WACC since 2017.

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



Note: In February 2018, we changed our standard approach for determining the WACC. The timing of the latter change in methodology is highlighted.[1]

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

1 Final Report – Review of our WACC method – February 2018.

Table 1 summarises our estimates of the nominal and real post-tax WACC ranges and the midpoints. It also compares the current WACC estimates with those we published in the February 2020 update (the February 2020 update contains data sampled to 31 January 2020).

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

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

	Lower	Midpoint	Upper
31 January 2020			
Nominal post-tax	7.0%	7.1%	7.2%
Real post-tax	4.6%	4.7%	4.8%
31 July 2020			
Nominal post-tax	6.6%	6.7%	6.8%
Real post-tax	4.4%	4.5%	4.6%

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

Table 2 Market-based parameters

	Risk free rate	Cost of debt	Market risk premium	Inflation
31 January 2020				
Current	2.3%	4.3%	8.8%	2.3%
10 years	3.2%	5.8%	6.0%	2.3%
31 July 2020				
Current	1.9%	4.0%	8.6%	2.1%
10 years	2.8%	5.4%	6.0%	2.1%

Note: The current estimates are measured either over 40 trading days or two months, depending on their data source.
Source: IPART analysis of Bloomberg, Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

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

- **Risk free rate:** The current measure of the risk free rate has decreased by 40 basis points and the long-term (10-year) measure has fallen by 40 basis points.
- **Cost of Debt:** The current measure of the cost of debt has decreased by 30 basis points while the long-term measure has fallen by 40 basis points.
- **Market Risk Premium (MRP):** The current measure of the MRP has decreased by 20 basis points. We do not update the long-term measure with changes in the market.
- **Inflation:** Our current measure of inflation has decreased by 20 basis points and the long-term measure has fallen by 20 basis points.

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

Approach to estimating inflation

Our standard approach is to take the geometric average of the 12-month ahead RBA forecast of inflation for year 1 and then the mid-point of its target inflation range (2.5%) for the remaining years of a determination. In the RBA's August 2020 Statement on Monetary Policy (SMP) it forecast CPI inflation of 1.0% for the year ended December 2021. Table 3 shows our inflation estimate under our standard approach for August 2020.

Table 2.1 Components of our inflation forecast under our standard approach

	Year 1	Year 2	Year 3	Year 4	Inflation forecast
Forecast	1.0%	2.5%	2.5%	2.5%	2.1%
Source	RBA 1-year ahead forecast	Mid-point of RBA target band	Mid-point of RBA target band	Mid-point of RBA target band	

Source: RBA, *Statement on Monetary Policy*, August 2020, Table 6.1, p 91.

In our recent determinations for Public Water Utilities (PWU) we applied our 2018 WACC method. However as part of these reviews given the uncertainty associated with the impacts of COVID19 we also considered an alternative approach where we estimated inflation by taking the geometric mean of the 1-year ahead RBA inflation forecast for year 1, the 2 year ahead RBA inflation forecast for year 2 and then the mid-point of the RBA target range for the remaining years.[3] Table 4 shows the inflation forecasts we would use to make our geometric average forecast under that approach for August 2020.

Table 2.2 Components of our inflation forecast under a modified approach

	Year 1	Year 2	Year 3	Year 4	Inflation forecast
Forecast	1.0%	1.5%	2.5%	2.5%	1.9%
Source	RBA 1-year ahead forecast	RBA 2-year ahead forecast	Mid-point of RBA target band	Mid-point of RBA target band	

Source: RBA, *Statement on Monetary Policy*, August 2020, Table 6.1, p 91.

The WACC estimates in our biannual update have been prepared using our standard approach in all previous editions of the market update. We have continued this practice for this edition to maintain consistency in the historical series of WACC estimates that this Fact Sheet presents.

We propose to undertake a review of our WACC method and over the next few months will release a short consultation paper which outlines our proposed focus areas for review, the review process timetable and its applicability to future reviews.

[3] At the time of those WACC decisions (March 2020) this approach to estimating inflation produced the same inflation estimate as our standard approach.

Short-run Market Risk Premium (MRP)

To enhance the transparency of our WACC decisions, we publish our short-run estimates of the MRP.[4] We base our current MRP estimate on the short-run estimates. Table 5 provides the short-run MRP estimate using our six measures of the MRP, reported to two decimal places.

Table 5 Short-run MRP estimates

Short-run MRP including imputation credits	Estimate at 31 July 2020
Damodaran	8.46%
Bank of England (2002)	8.94%
Bank of England (2010)	8.83%
Bloomberg	-
SFG Market indicator (mean)	8.07%
SFG analysts implied	9.60%
Short Run MRP	**8.58%**

Note: Bloomberg MRP estimate withheld for copyright reasons.
Source: IPART analysis of Bloomberg and Refinitiv (formerly Thompson Reuters) data; Frontier Economics.

4 IPART, MRP estimates at end of April 2017 – Fact Sheet, May 2017.

3 Industry Analysis

Table 6 shows the industry-specific parameters that we have previously adopted for the industries we regulate.[5]

Table 6 Industry-specific WACC parameters

	Equity beta			Target term to maturity	Gearing ratio
	Low	Mid	High		
Water[a]	0.6	0.7	0.8	10 Years	60%
Transport[b]					
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%

a 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).

b In the transport industry, for rural and regional buses, we estimated a gearing level for the rural and regional bus industry of 40% to 60% after reviewing the gearing level of a sample of firms with some bus operations (See IPART, *Maximum fares for rural and regional bus services from 1 January 2018 - Final report*, December 2017, pp 136-139).

5 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.

Table 6 shows the six-monthly WACC range and midpoint estimates over the last two years for the industries that IPART regulates.

Table 6 Regulated industries half-yearly real post-tax WACC ranges and midpoints from July 2018 to July 2020

	Jul-18	Jan-19	Jul-19	Jan-20	Jul-20
Water					
Upper bound	4.5%	4.4%	4.1%	4.0%	3.9%
Midpoint	4.1%	4.2%	3.8%	3.8%	3.6%
Lower bound	3.8%	4.0%	3.6%	3.6%	3.4%
Rail					
Upper bound	5.0%	4.9%	4.6%	4.5%	4.3%
Midpoint	4.7%	4.8%	4.4%	4.4%	4.2%
Lower bound	4.4%	4.7%	4.3%	4.3%	4.1%
Bus, Light rail					
Upper bound	4.9%	4.7%	4.5%	4.4%	4.2%
Midpoint	4.6%	4.6%	4.3%	4.2%	4.1%
Lower bound	4.2%	4.5%	4.1%	4.1%	3.9%
Ferries					
Upper bound	5.2%	5.2%	4.8%	4.8%	4.6%
Midpoint	5.1%	5.2%	4.8%	4.8%	4.6%
Lower bound	4.9%	5.1%	4.8%	4.8%	4.6%

Note: 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.

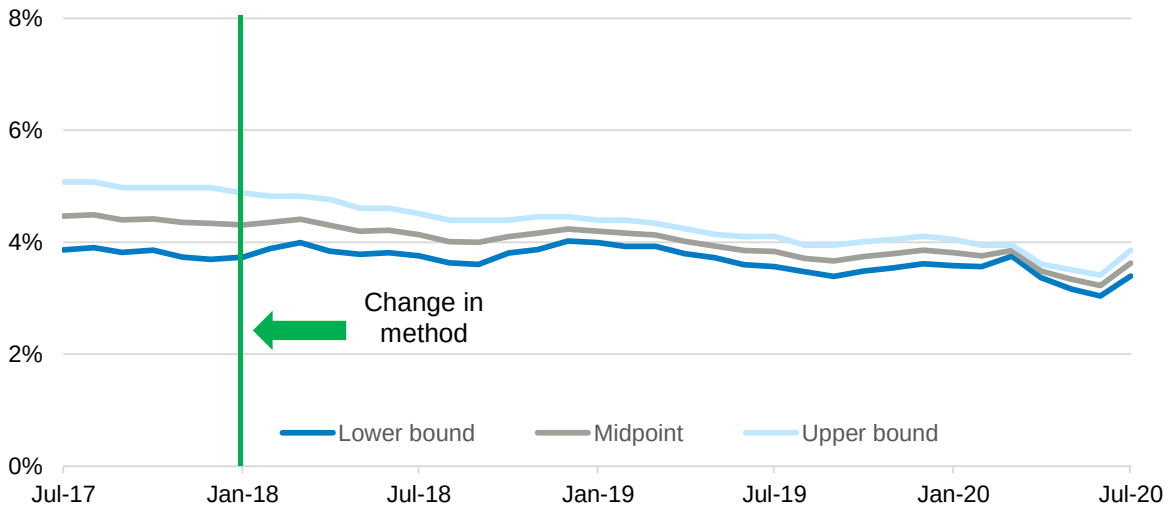
Source: IPART calculations.

Water

Figure 2 shows the six-monthly WACC range and midpoint estimates since July 2017 for the water industry. The WACC for the water industry ranges from 3.4% to 3.9%, with a midpoint of 3.6%. In the February 2020 market update, we reported a midpoint WACC of 3.8% for the water industry.

These WACC estimates are prepared on the basis that a business has completed the transition to and is using the trailing average cost of debt. In our 2020 public water utility determinations we assumed that the businesses were in the first year of the transition to the trailing average cost of debt. This puts greater weighting on the current (ie. March 2020) cost of debt observations. Therefore the WACC estimates from those pricing decisions will not be consistent with those in Figure 2.

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



Note: In February 2018, we changed our standard approach for determining the WACC. The timing of the latter change in methodology is highlighted.

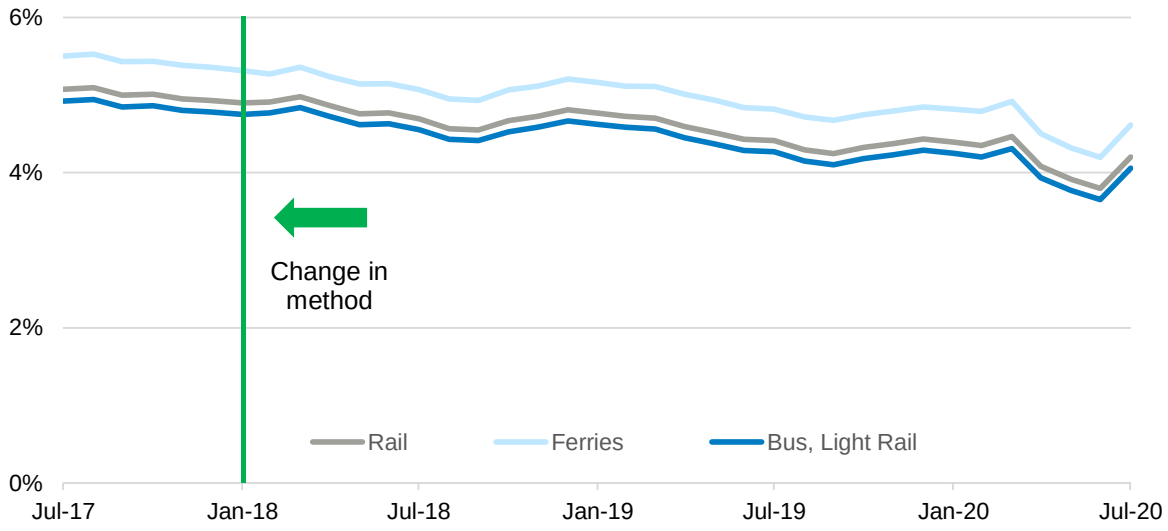
Source: IPART analysis of Bloomberg, Reserve Bank of Australia and Refinitiv (formerly Thompson Reuters) data.

Transport

Figure 3 shows the monthly midpoint WACC estimates for the various modes of transport (our 2020 Opal fare review did not use a building block approach and therefore did not require a WACC decision) based on the industry-specific parameters:

- The rail industry has a midpoint WACC of 4.2%. In the February 2020 market update, we reported a midpoint WACC of 4.4%.
- The bus and light rail industry has a midpoint WACC of 4.1%. In the February 2020 market update, we reported a midpoint WACC of 4.2%.
- The ferry industry has a midpoint WACC of 4.6%. In the February 2020 market update, we reported a midpoint WACC of 4.8%.

Figure 3 Transport industries real post-tax WACC midpoints

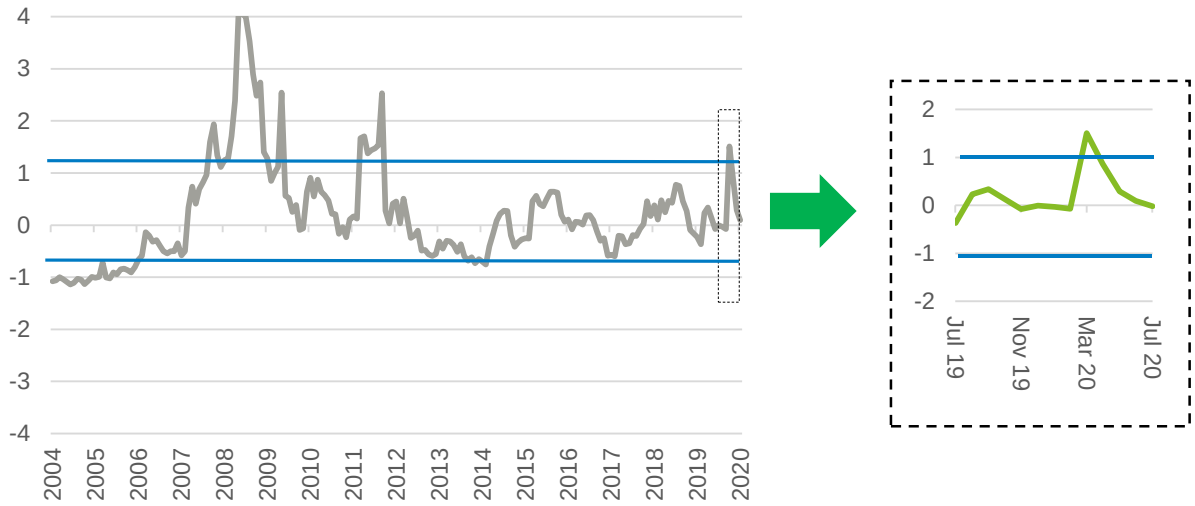


Note 1: Parameters for the modes of transport are shown in Table 6.
Note 2: In February 2018, we changed our standard approach for determining the WACC. The timing of the latter change in methodology is highlighted.
Source: IPART analysis of Bloomberg, Reserve Bank of Australia and Refinitiv (formerly Thompson 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 July 2020. As shown in Figure 4, the uncertainty index has moved to more than one standard deviation from the long term average of zero in the past year. According to our WACC decision rule[6], we would consider moving away from the midpoint WACC. We note that in our recent PWU decisions we kept to the mid-point approach.[7]

Figure 4 IPART's uncertainty index



Source: IPART analysis.

6 Our 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

7 This approach was generally supported by stakeholders, see: IPART, *Review of prices for WaterNSW Greater Sydney – Final Report*, June 2020, pp 172-174.