WACC Biannual Update

February 2019

1 Introduction

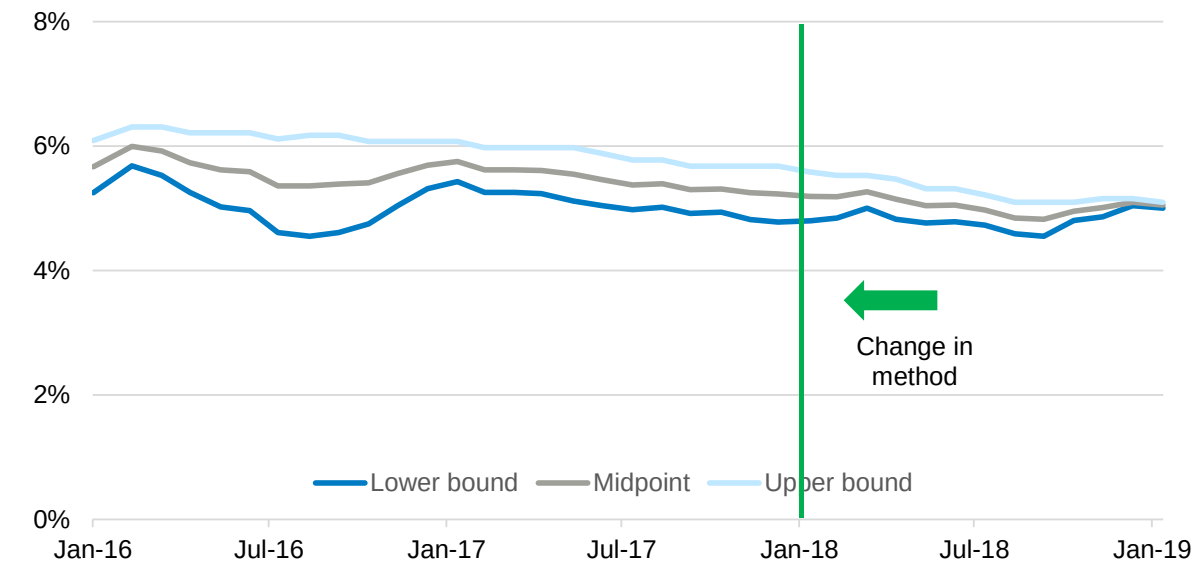
Every six months, we publish a financial market update to help our stakeholders understand and replicate our Weighted Average Cost of Capital (WACC) decisions. We also publish a spreadsheet containing a working copy of our WACC model. This update and the accompanying spreadsheet contain market data sampled to 31 January 2019.

In February 2018, the final report[1] on the review of IPART's standard method for determining the WACC was published. This method is applied to pricing decisions that take effect on or after 1 July 2018. In light of this, this update will include commentary on the differences under this method.

2 Overview

Since the last update in August 2018, the mid-point of the WACC estimate (real post-tax WACC based on an equity beta of 1 and a gearing ratio of 60%) has remained constant at 5% (Table 1). Figure 1 presents the real post-tax WACC since 2016.

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 2015, we changed[2] our approach to forecasting inflation for the purposes of converting the nominal post-tax WACC into a real post-tax WACC. The effect of the latter change in methodology is highlighted.

Source: IPART analysis of Bloomberg, Reserve Bank of Australia and Thomson Reuters data.

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

2 Fact Sheet – New approach to forecasting the WACC inflation adjustment – March 2015

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 2018 update (the August 2018 update contains data sampled to 31 July 2018).

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 2018			
Nominal post-tax	7.2%	7.5%	7.7%
Real post-tax	4.7%	5.0%	5.2%
31 January 2019			
Nominal post-tax	7.5%	7.6%	7.6%
Real post-tax	5.0%	5.0%	5.1%

Source: IPART analysis of Bloomberg, Reserve Bank of Australia and Thomson Reuters data.

Table 2 Market-based parameters

	Risk free rate	Cost of debt	Market risk premium	Inflation
31 July 2018				
Current	2.6%	4.8%	8.3%	2.4%
10 years	3.6%	6.5%	6.0%	2.4%
31 January 2019				
Current	2.7%	5.0%	8.6%	2.4%
10 years	3.6%	6.3%	6.0%	2.4%

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 Thomson Reuters data.

Our calculation of the WACC can be found in the accompanying spreadsheet.[3] 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 increased by 10 basis points and the long-term (10-year) measure has remained constant.
- **Cost of debt:** The current measure of the debt margin has increased by 20 basis points while the long-term measure has fallen by 20 basis points.
- **Market Risk Premium (MRP):** The current measure of the MRP has increased by 30 basis points. We do not update the long-term measure with changes in the market.
- **Inflation:** Our current and long-term inflation forecast is constant at 2.4%.

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

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 3 provides the short-run MRP estimate using our six measures of the MRP, reported to two decimal places.

Table 3 Short-run MRP

Short-run MRP including imputation credits	Estimate at 31 January 2019
Damodaran	8.83%
Bank of England (2002)	9.72%
Bank of England (2010)	8.85%
Bloomberg	-
SFG Market indicator (mean)	8.08%
SFG analysts implied	8.65%
Short Run MRP	**8.58%**

Source: IPART analysis of Bloomberg and Thomson Reuters data: Frontier Economics.
Note: Bloomberg MRP estimate withheld for copyright reasons

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

3 Industry Analysis

Table 4 shows the industry-specific parameters that we have previously adopted for the industries we regulate.[5]

Table 4 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%
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) and WaterNSW (for the Murray-Darling Basin valleys, we apply the ACCC's WACC methodology prescribed under the Water Charge (Infrastructure) Rules 2010).

b: For the transport industry, we determine a WACC for Sydney Trains, Sydney Ferries, light rail, private ferries, and metropolitan and outer metropolitan buses. We have recently estimated a WACC for rural and regional buses, estimating 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 5 shows the six-monthly WACC range and midpoint estimates over the last two years for the industries that IPART regulates.

Table 5 Regulated industries half-yearly real post-tax WACC ranges and midpoints from January 2017 to January 2019

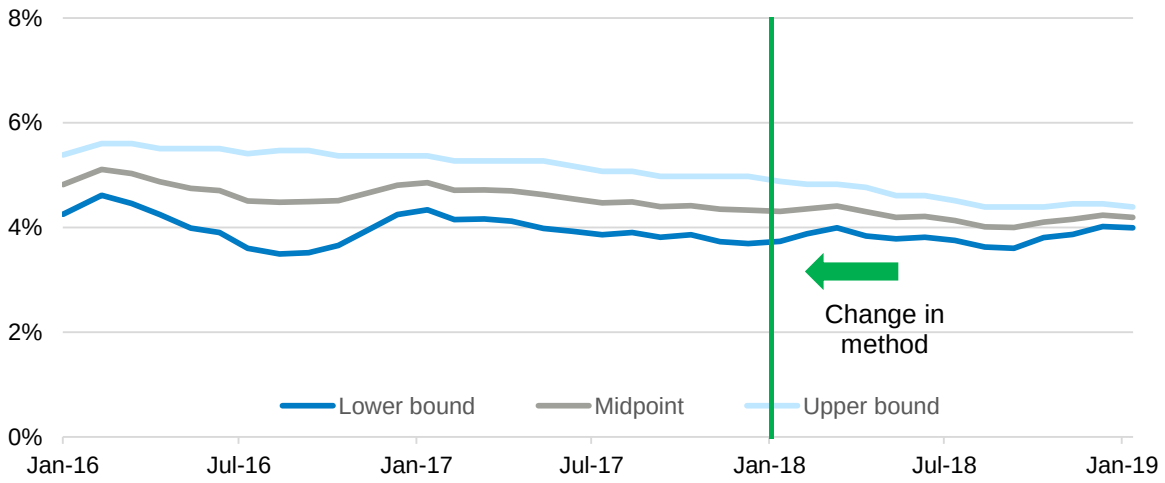
	Jan-17	Jul-17	Jan-18	Jul-18	Jan-19
Water					
Upper bound	5.4%	5.1%	4.9%	4.5%	4.4%
Midpoint	4.9%	4.5%	4.3%	4.1%	4.2%
Lower bound	4.3%	3.9%	3.7%	3.8%	4.0%
Rail					
Upper bound	5.8%	5.5%	5.3%	5.0%	4.9%
Midpoint	5.5%	5.1%	4.9%	4.7%	4.8%
Lower bound	5.1%	4.6%	4.4%	4.4%	4.7%
Bus, Light rail					
Upper bound	5.7%	5.4%	5.2%	4.9%	4.7%
Midpoint	5.3%	4.9%	4.7%	4.6%	4.6%
Lower bound	4.9%	4.4%	4.3%	4.2%	4.5%
Ferries					
Upper bound	6.1%	5.8%	5.6%	5.2%	5.2%
Midpoint	5.9%	5.5%	5.3%	5.1%	5.2%
Lower bound	5.6%	5.2%	5.1%	4.9%	5.1%

Source: IPART calculations.

Water

Figure 2 shows the six-monthly WACC range and midpoint estimates since January 2016 for the water industry. The WACC for the water industry ranges from 4.0% to 4.4%, with a midpoint of 4.2%. In the August 2018 market update, we reported a midpoint WACC of 4.1% for the water industry.

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

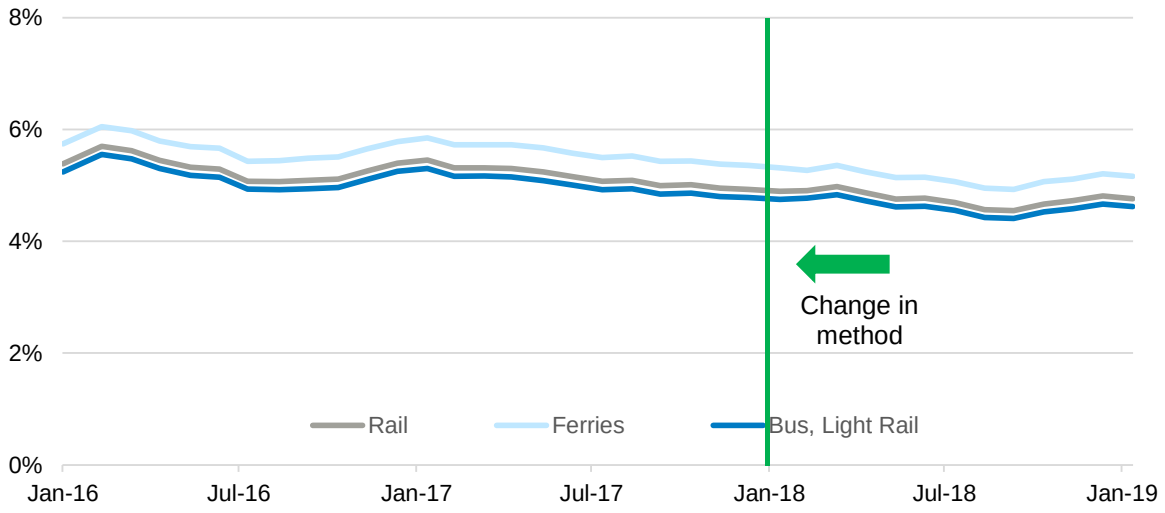


Transport

In 2016, we determined maximum public transport fares for four modes of transport to apply from July 2016. In making this determination, we estimated the WACC from each mode of transport. Figure 3 shows the monthly midpoint WACC estimates for the various modes of transport since January 2016 based on the industry-specific parameters:

- The rail industry has a midpoint WACC of 4.8%. In the August 2018 market update, we reported a midpoint WACC of 4.7%
- The bus and light rail industry has a midpoint WACC of 4.6%. In the August 2018 market update, we reported a midpoint WACC of 4.6%
- The ferry industry has a midpoint WACC of 5.2%. In the August 2018 market update, we reported a midpoint WACC of 5.1%.

Figure 3 Transport industries real post-tax WACC midpoints

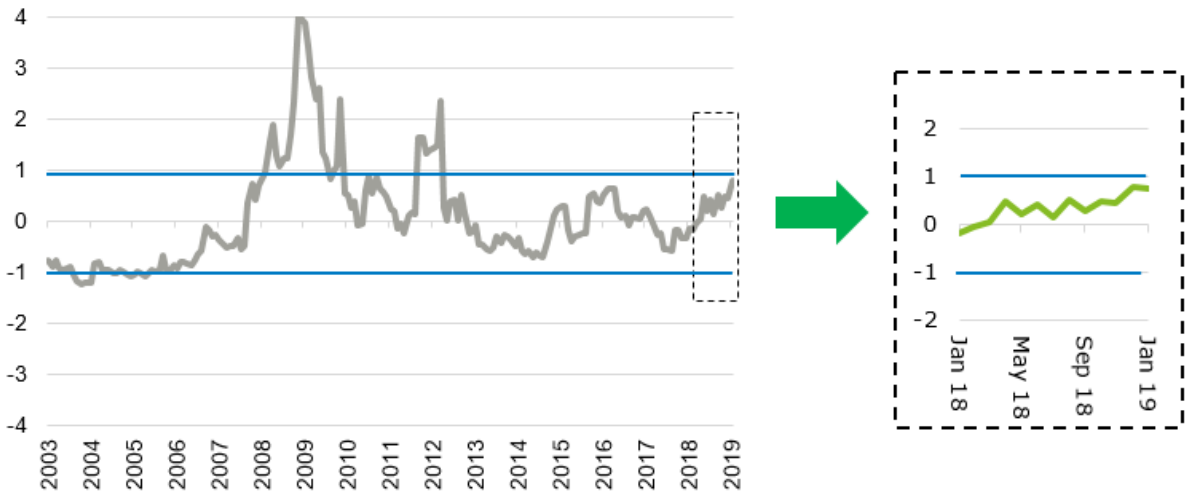


Note: Parameters for the modes of transport are shown in Table 4.

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 January 2019. 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[6], we would therefore use the midpoint WACC to estimate the return on capital invested by the regulated businesses.

Figure 4 IPART's uncertainty index



Source: IPART analysis.

6 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