# WACC Biannual Update

February 2018

1   Introduction

Every six months, we publish a financial market update to help our stakeholders understand and replicate our 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 2018.

2   Overview

Since the last update in August 2017, 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 (bps) to 5.2% (Table 1). Figure 1 presents the real post-tax WACC since 2015.

Figure 1   Estimated real post-tax WACC midpoint and range based on an equity beta of 1 and a gearing ratio of 60%
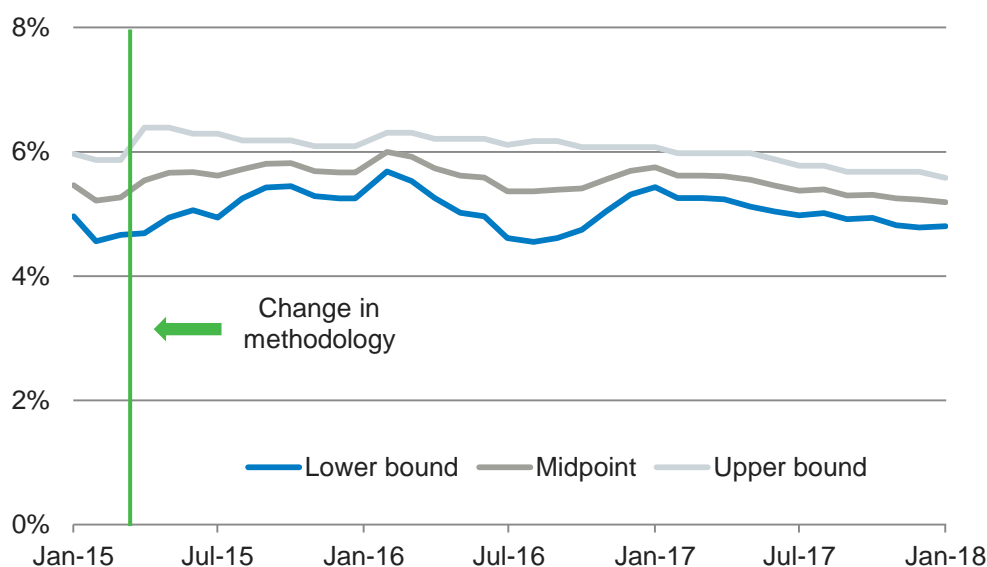
Note: We updated our WACC methodology in April 2014 and in March 2015. In 2014, we decided to use the RBA's credit spreads instead of Bloomberg corporate bond yields to estimate the debt margin. In 2015, we changed our approach to forecasting inflation for the purposes of converting the nominal post-tax 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.

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 2017 update (the August 2017 update contains data sampled to 31 July 2017).

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 2017			
Nominal post-tax	7.6%	8.0%	8.4%
Real post-tax	5.0%	5.4%	5.8%
31 January 2018			
Nominal post-tax	7.4%	7.8%	8.2%
Real post-tax	4.8%	5.2%	5.6%

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

Table 2   Market-based parameters

	Risk free rate	Debt margin	Market risk premium	Inflation
31 July 2017				
Current	2.6%	2.0%	9.5%	2.5%
10 years	4.1%	3.2%	6.0%	2.5%
31 January 2018				
Current	2.7%	1.8%	9.1%	2.5%
10 years	3.9%	3.2%	6.0%	2.5%

a 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.[1]

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 fallen by 20 basis points.

▼ **Debt margin**: The current measure of the debt margin has decreased by 20 bps while long-term measure has remained constant.

▼ **Market risk premium**: The current market risk premium has decreased by 40 bps. We do not update the long-term measure with changes in the market.

▼ **Inflation**: Our current and long-term inflation forecast is constant at 2.5%.

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[1]   Select an industry from the drop-down menu in the accompanying spreadsheet for industry-specific WACC estimates.

Short-run MRP

We decided last year to publish our short-run estimates of the MRP to further enhance the transparency of our WACC decisions.[2] 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. The lower bound, midpoint and upper bound of the current MRP range are also shown.

Table 3   Short-run MRP

Short-run MRP including imputation credits	Estimate at 31 January 2018
Damodaran	8.23%
BoE (2002)	11.30%
BoE (2010)	8.52%
Bloomberg	-[a]
SFG Market indicator (mean)	6.80%
SFG analysts implied	7.73%
Lower	**6.8%**
Midpoint	**9.1%**
Upper	**11.3%**

Source: IPART analysis of Bloomberg and Thomson Reuters data; Frontier Economics.
Note: Lower, midpoint and upper MRP estimates are rounded to one decimal place for our WACC calculation.
a: Bloomberg MRP estimate withheld for copyright reasons.

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2   IPART, *MRP estimates at end of April 2017 – Fact sheet,* May 2017.

3 Analysis

WACC analysis for the industries we regulate

Table 4 shows the industry-specific parameters that we have previously adopted for the industries we regulate.[3]

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	0.85	1.0	10 years	60%
Light rail	0.7	0.85	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).

Table 5 shows the six-monthly WACC range and midpoint estimates over the last two years for the industries that IPART regulates.

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[3]   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   Regulated industries half-yearly real post-tax WACC ranges and midpoints from January 2016 to January 2018

	Jan-16	Jul-16	Jan-17	Jul-17	Jan-18
Water					
Upper bound	5.4%	5.4%	5.4%	5.1%	4.9%
Midpoint	4.8%	4.5%	4.9%	4.5%	4.3%
Lower bound	4.3%	3.6%	4.3%	3.9%	3.7%
Rail					
Upper bound	5.9%	5.9%	5.8%	5.5%	5.3%
Midpoint	5.4%	5.1%	5.5%	5.1%	4.9%
Lower bound	4.9%	4.3%	5.1%	4.6%	4.4%
Bus, Light rail					
Upper bound	5.7%	5.8%	5.7%	5.4%	5.2%
Midpoint	5.2%	5.0%	5.3%	4.9%	4.7%
Lower bound	4.8%	4.1%	4.9%	4.4%	4.3%
Ferries					
Upper bound	6.1%	6.1%	6.1%	5.8%	5.6%
Midpoint	5.7%	5.5%	5.9%	5.5%	5.3%
Lower bound	5.4%	4.8%	5.6%	5.2%	5.1%

Source: IPART calculations.

Water

Figure 2 shows the six-monthly WACC range and midpoint estimates since January 2015 for the water industry. The WACC for the water industry ranges from 3.7% to 4.9%, with a midpoint of 4.3%. In the August 2017 market update, we reported a midpoint WACC of 4.5% for the water industry.

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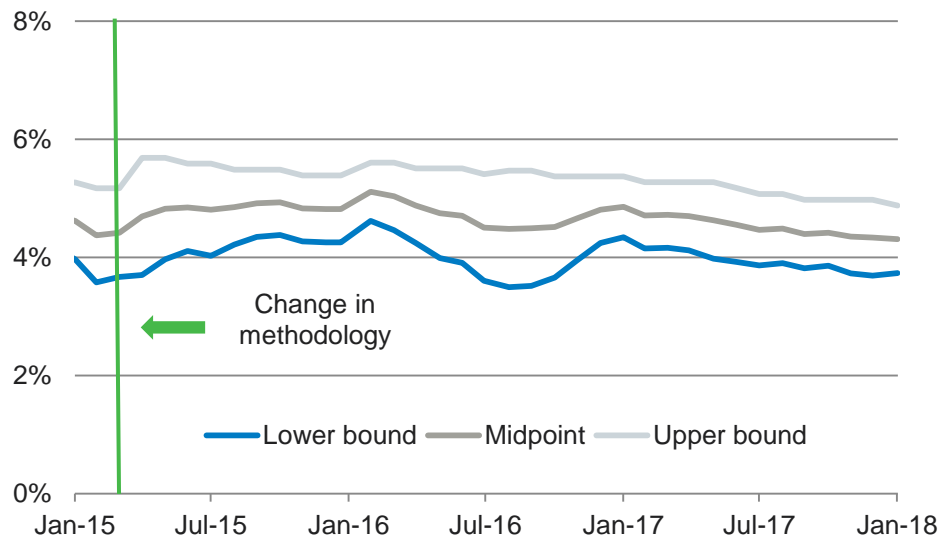
Transport

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 for each mode of transport.[4]

Figure 3 shows the monthly midpoint WACC estimates for the various modes of transport since 2014, based on the industry-specific parameters we previously adopted.

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4   See IPART, *Information Paper No 10 – Weighted Average Cost of Capital,* May 2016, available here.

Figure 3   Transport industries real post-tax WACC midpoints
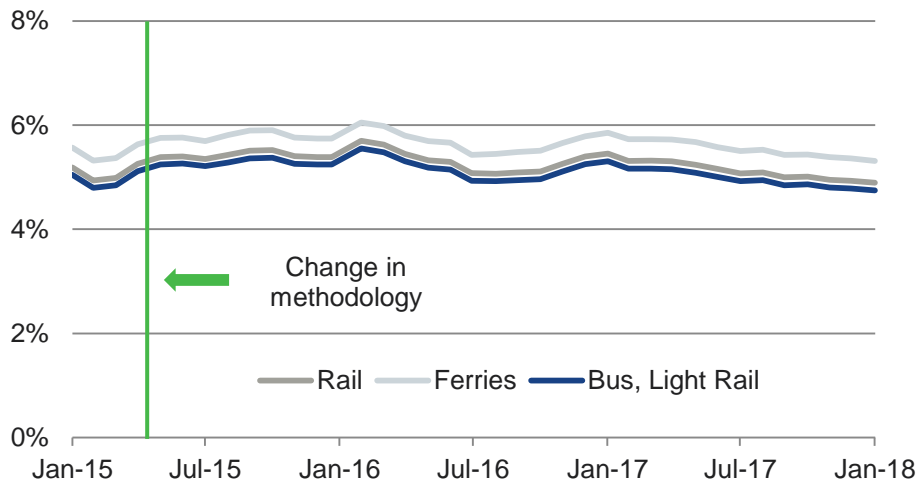
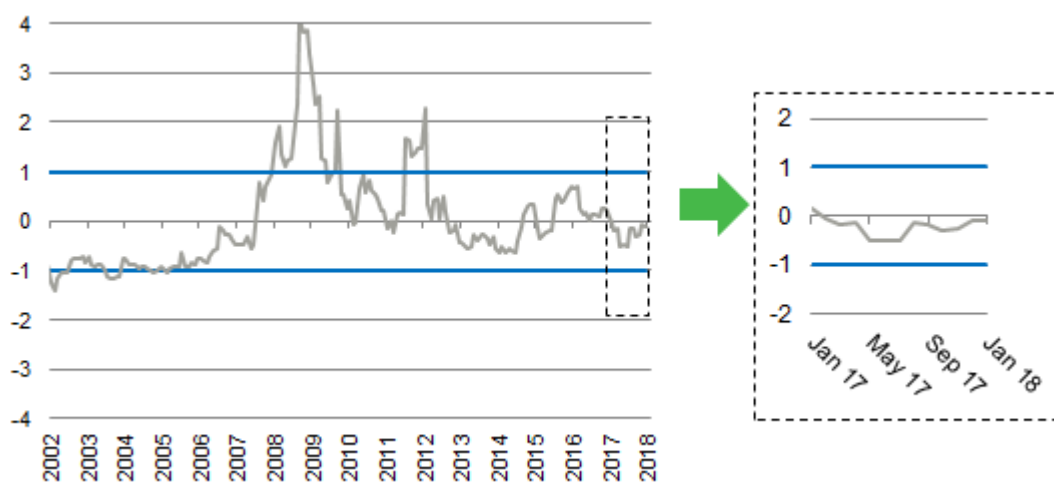**Note:** Parameters for the modes of transport are shown in Table 4.

Since the August 2017 market update, the WACC has decreased by 20 bps for each of the transport modes.

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 here.

We have updated the uncertainty index to the end of January 2018. 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, 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.