

FACT SHEET

WACC Biannual Update

August 2016

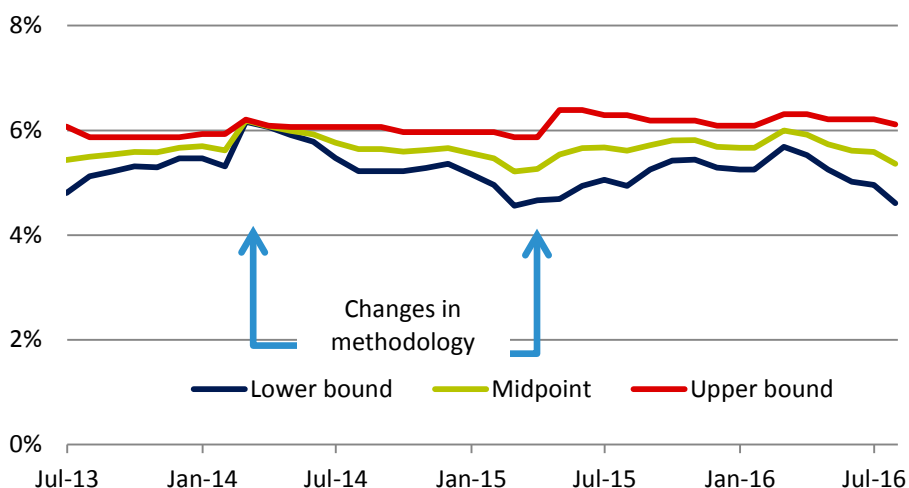
Every six months, we publish a biannual financial market update to help our stakeholders understand and replicate our WACC decisions. We also publish a spreadsheet containing a working copy of our full WACC model. This update and the accompanying spreadsheet contain market data sampled to the end of July 2016.¹

We will continue to release market updates biannually in February and August.

Overview

Using a market equity beta of 1 and a gearing ratio of 60%, the real post-tax WACC estimates over the last three years are shown in Figure 1.

Figure 1 Estimated real post-tax WACC midpoint and range based on a market 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 effects of these decisions are highlighted.

¹ As the last day of July 2016 fell on a Sunday, we have sampled the risk free rate to 29 July. Graphs contain monthly data.

Table 1 shows our calculation of the WACC range. It compares the current estimates to those sampled in the February 2016 edition of the market update (which were sampled to 20 January 2016). Table 2 compares the underlying market-based parameters.

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

	Lower	Midpoint	Upper
<i>20 January 2016</i>			
Nominal post-tax	7.9%	8.3%	8.7%
Real post-tax	5.2%	5.7%	6.1%
<i>29 July 2016</i>			
Nominal post-tax	7.1%	7.9%	8.7%
Real post-tax	4.6%	5.4%	6.1%


Table 2 Market-based parameters

	Risk free rate	Debt margin	Market risk premium	Inflation
<i>20 January 2016</i>				
40 days	2.8%	2.8%	8.5%	2.5%
10 years	4.6%	2.9%	6.0%	2.5%
Midpoint	3.7%	2.9%	7.3%	2.5%
<i>29 July 2016</i>				
40 days	2.0%	2.8%	8.6%	2.4%
10 years	4.4%	3.1%	6.0%	2.4%
Midpoint	3.2%	3.0%	7.3%	2.4%

Source: IPART.

Figure 1 and Table 1 show that WACC estimates have decreased since our last market update in February 2016. Over the last six months, the midpoint real post-tax WACC estimate has decreased from 5.7% to 5.4%. In the last six months, the WACC range has widened. Our full calculation of the WACC can be found in the accompanying [spreadsheet](#).²

² Select an industry from the drop-down menu in the accompanying [spreadsheet](#) for industry-specific WACC estimates.



At the parameter level, Table 2 shows that over the last six months:

- ▼ **Risk free rate:** The current (40-day) measure of the risk free rate has fallen by 80 basis points; the long-term (10 year) measure has fallen by 20 basis points.
- ▼ **Debt margin:** The current measure of the debt margin has been stable over the last six months. The long-term measure has increased by 20 basis points.
- ▼ **Market risk premium:** The current market risk premium has been fairly stable, increasing by 10 basis points. We do not update the long-term measure with changes in the market.
- ▼ **Inflation:** Our current and long-term inflation forecast has decreased from 2.5% to 2.4%.

Analysis

1. WACC analysis for the industries we regulate

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

Table 3 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	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%
Gas retail	0.9	1.0	1.1	10 years	20%

^a For the water industry, we determine a WACC for Essential Energy, DPI Water, Gosford City Council, Hunter Water Corporation, Sydney Desalination Plant, Sydney Water Corporation, WaterNSW and Wyong Shire Council.

^b For the transport industry, we determine a WACC for Sydney Trains, Sydney Ferries, light rail, private ferries, and metropolitan and outer metropolitan buses.

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 depart from our standard industry parameter valuations after taking account of the individual regulated business's circumstances. Further, the best estimate of each parameter can change over time.

Table 4 shows the six-monthly WACC range and midpoint estimates over the last two years for the industries we regulate.

Table 4 Half-yearly real post-tax WACC midpoints and ranges from July 2014 to July 2016

	Jul-14	Jan-15	Jul-15	Jan-16	Jul-16
Water					
Upper bound	5.4%	5.3%	5.6%	5.4%	5.4%
Midpoint	4.8%	4.5%	4.8%	4.8%	4.5%
Lower bound	4.3%	3.8%	4.1%	4.3%	3.6%
Rail					
Upper bound	5.8%	5.7%	6.1%	5.9%	5.9%
Midpoint	5.4%	5.1%	5.4%	5.4%	5.1%
Lower bound	4.9%	4.4%	4.7%	4.9%	4.3%
Light rail, bus					
Upper bound	5.7%	5.6%	5.9%	5.7%	5.8%
Midpoint	5.2%	5.0%	5.2%	5.2%	5.0%
Lower bound	4.7%	4.5%	4.5%	4.8%	4.1%
Ferry					
Upper bound	6.1%	6.0%	6.3%	6.1%	6.1%
Midpoint	5.7%	5.6%	5.7%	5.7%	5.5%
Lower bound	5.4%	5.2%	5.1%	5.4%	4.8%
Gas retail					
Upper bound	7.5%	7.4%	7.5%	7.5%	7.2%
Midpoint	7.4%	7.3%	7.3%	7.4%	7.1%
Lower bound	7.3%	7.2%	7.1%	7.3%	6.9%

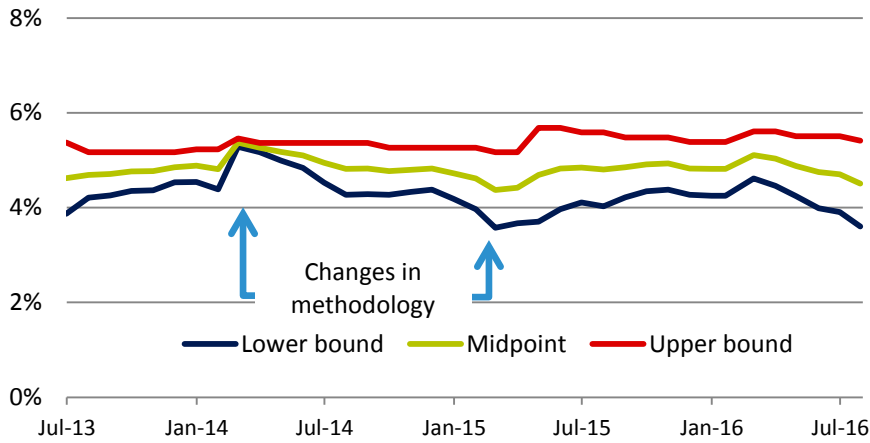
Note: We updated our WACC approach in early 2015 (see the note at the bottom of page 1).

Water

Figure 2 shows the monthly WACC range and midpoint estimates over the last three years for the water industry. The WACC for the water industry currently ranges from 3.6% to 5.4%, with a midpoint of 4.5%. Six months ago, we noted in the February 2016 market update that the midpoint WACC was 4.8% for the water industry.³

³ IPART, *WACC Biannual market update*, February 2016, p 4.

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

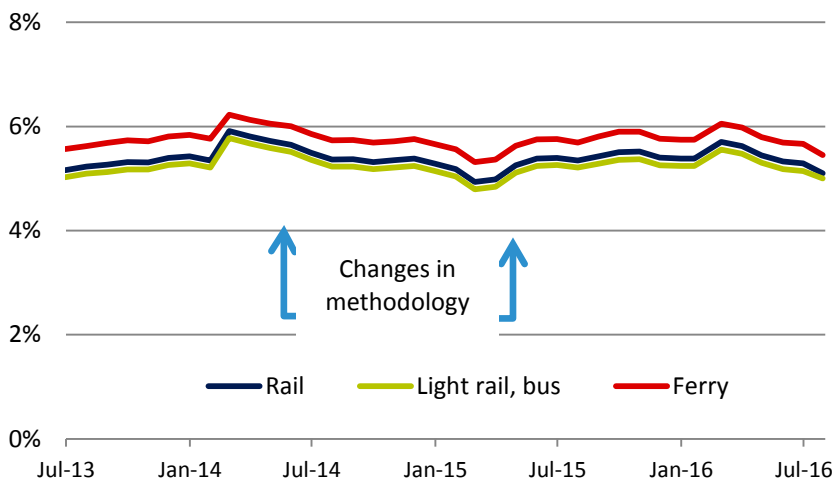


Note: Updates in our WACC approach have been highlighted.

Transport

In May 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 over the last three years, based on the industry-specific parameters we adopted in the final decision.

Figure 3 Midpoint real post-tax WACC for transport industry (industry-specific parameters from Table 3)



Note: Updates in our WACC approach have been highlighted.

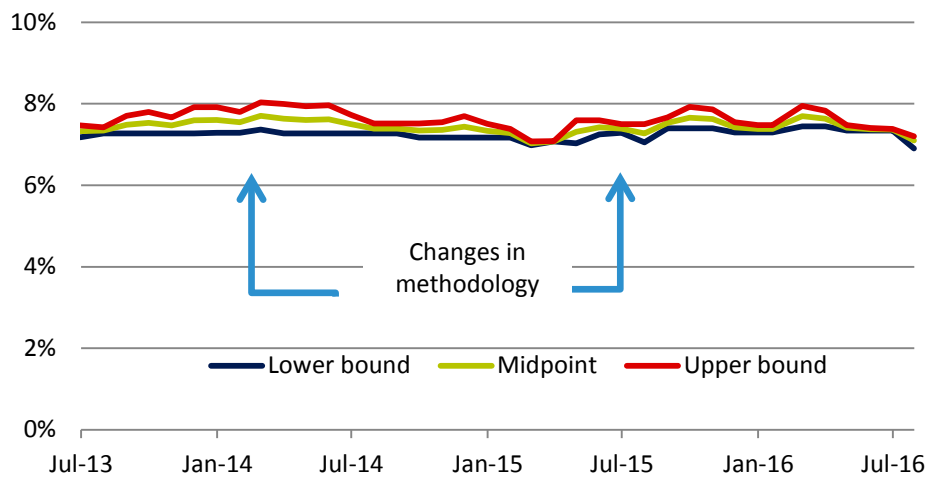
⁴ See IPART, *Information Paper No 10 – Weighted Average Cost of Capital*, May 2016, available [here](#).

Since the February 2016 market update, the WACC has decreased by 20 to 30 basis points for each of the modes of transport.

Gas retail

Figure 4 shows the monthly WACC estimates for the gas retail industry over the last three years. The midpoint WACC to the end of July 2016 is 7.1%. Since the February 2016 market update, the midpoint WACC has decreased by 30 basis points.

Figure 4 Gas retail real post-tax WACC midpoints and ranges



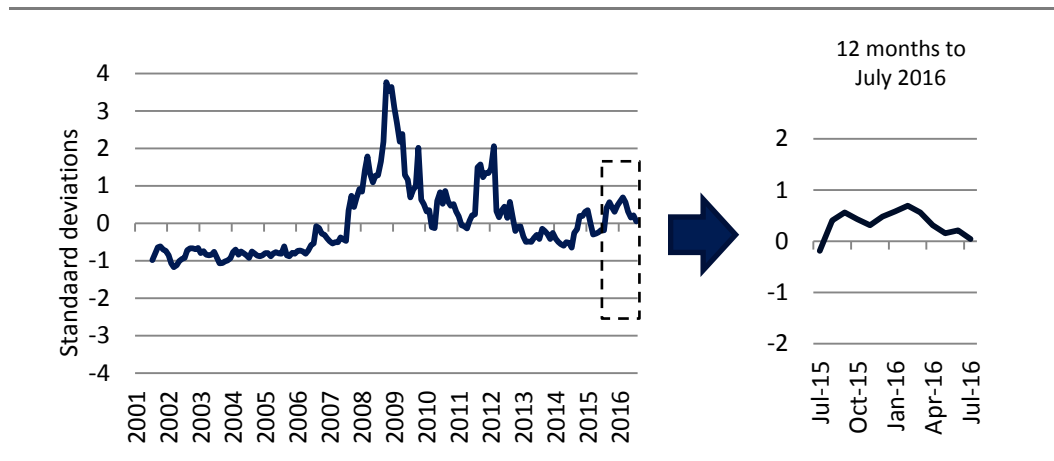
Note: Updates in our WACC approach have been highlighted.

2. Financial market uncertainty index

In our 2013 [Final Report](#) on the 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 July 2016. As shown in Figure 5, the uncertainty index is currently within one standard deviation of the long-term average value of zero. According to our WACC decision rule, we therefore use the midpoint WACC to estimate the return on capital invested by the regulated businesses.

Figure 5 IPART's uncertainty index



If the uncertainty index was more than one standard deviation from the long term average, we would consider moving away from the midpoint WACC. In deciding whether and by how much the WACC point estimate should deviate from the midpoint, we would have regard to the value of the uncertainty index and additional financial market information.

3. Additional market data

- ▼ Over the last six months, the 40-day measure of the risk free rate has fallen from 2.8% to 2.0%. After the RBA reduced the cash rate to 1.5% on 2 August, the risk free rate fell to an all-time low of 1.8%.⁵
- ▼ The 3-month bank bill swap rate is currently 1.8%.⁶ It has fallen by 50 basis points since the February 2016 update.
- ▼ To the end of July, the RBA's measure of 10-year BBB rated debt indicates a margin of 254 basis points over the risk free rate.⁷
- ▼ There have been two BBB± bonds issued in the last six months in Australia (excluding bonds from financial institutions).
 - Jemena has recently issued a 7-year BBB+ bond at 182 basis points above the swap rate. It currently yields 3.7%
 - QPH Finance⁸ has recently issued a 7-year BBB bond at 180 basis points above the swap rate, currently yielding 3.5%.

Analyst and consultant reports

We would consider a range of equity analyst and consultant reports for their cost of capital assumptions.

⁵ AFR, Bill Gross warns on dangers of ultra-low bond yields, 3 August 2016.

⁶ Accessed on 10 August 2016 from Bloomberg, ticker ADDB3M.

⁷ RBA Statistics, *Aggregate Measures of Australian Corporate Bond Spreads and Yields - F3 - Non-financial corporate BBB-rated bonds - Spread to AGS - 10 year*, accessed on 10 August 2016.

⁸ QPH Finance manages and develops the Port of Brisbane.