

FACT SHEET

WACC Biannual Update

February 2016

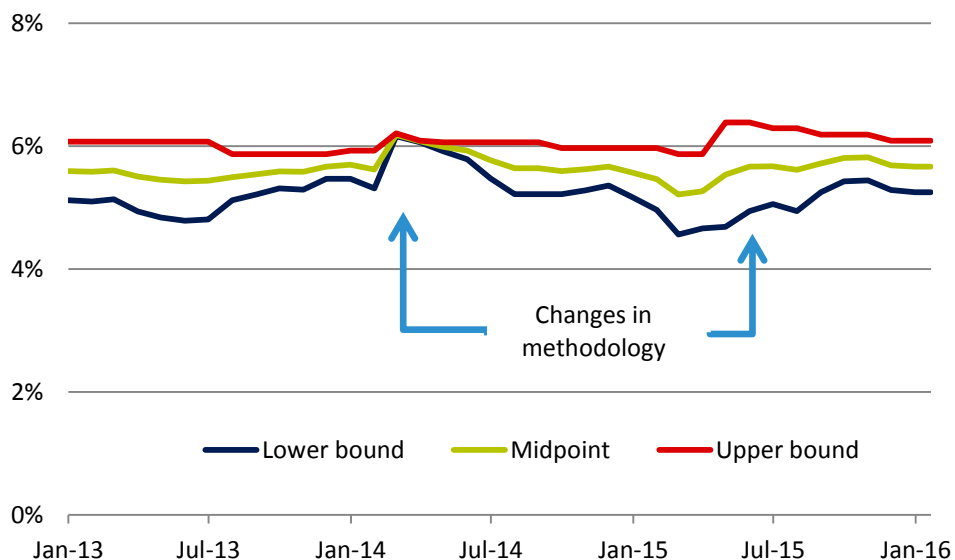
We publish a biannual financial market update to help our stakeholders understand and replicate our WACC decisions. We also publish a spreadsheet containing a working copy of our full WACC model. This update and the accompanying spreadsheet contain market data sampled to 20 January 2016.

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

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 as shown in Figure 1.

Figure 1 Estimated WACC parameters and range based on a market equity beta of 1 and a gearing ratio of 60%



Note: We developed 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.

Table 1 shows the current values for the market-based parameters. Table 2 shows our calculation of the WACC range.

Table 1 Market-based parameters as of 20 January 2016

	Risk free rate	Debt margin	Market risk premium	Inflation
40 days	2.8%	2.8%	8.5% ^a	2.5%
10 years	4.6%	2.9%	6.0%	2.5%
Midpoint	3.7%	2.9%	7.3%	2.5%

^a Midpoint estimate.

Table 2 IPART's WACC range as of 20 January 2016 (using an equity beta value of 1 and a gearing ratio of 60%)

	Lower	Midpoint	Upper
Nominal post-tax	7.9%	8.3%	8.7%
Real post-tax	5.2%	5.7%	6.1%

Figure 1 shows that WACC estimates have been relatively stable since our last market update in August 2015. Over the last six months, the midpoint real post-tax WACC estimate has increased slightly from 5.6% to 5.7%. Similarly, the updated WACC estimate has been stable for the industries we regulate.

The market-based parameters have also been fairly stable. Over the last six months:

- ▼ **Risk free rate:** The current (40-day) measure of the risk free rate has fallen by around 10 basis points; the long-term (10-year) measure has fallen by 10 basis points.
- ▼ **Debt margin:** The current measure of the debt margin has increased by around 40 basis points. The long-term measure has been constant.
- ▼ **Market risk premium:** The current market risk premium has trended up by 60 basis points. We do not update the long-term measure with changes in the market.
- ▼ **Inflation:** Our current and long-term inflation forecast has increased to 2.5%, from 2.4%.

Our full calculation of the WACC can be found in the accompanying [spreadsheet](#).¹

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

Analysis

1. WACC analysis for the industries we regulate

Table 3 shows the industry-specific parameters we typically adopt 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, State 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 our current methodology and parameter values only. This is because every 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.² Further, the best estimate of each parameter can change over time.

² For example, in our decisions for the water industry, we typically adopt a gearing level of 60%. However, in the previous [determination](#) for Essential Energy's water business, we determined that a gearing level ranging from 50% to 60% was appropriate for this particular decision.

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

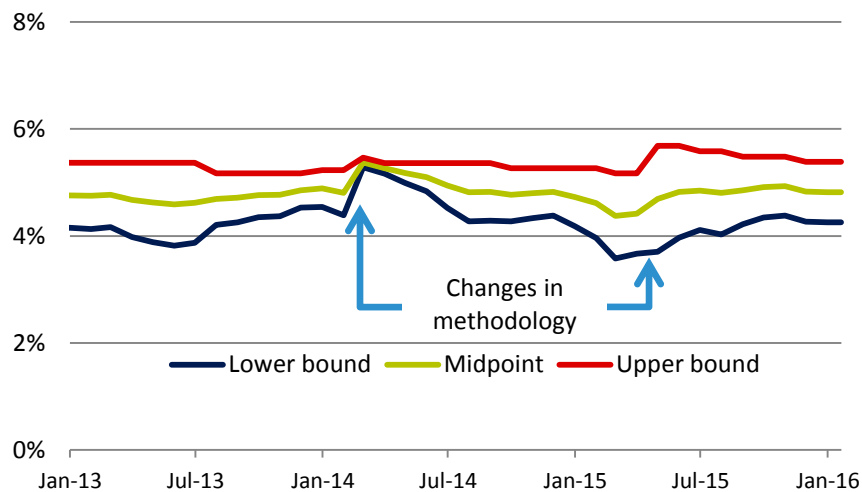
	Jan-14	Jul-14	Jan-15	Jul-15	Jan-16
Water					
Upper bound	5.2%	5.4%	5.3%	5.6%	5.4%
Midpoint	4.8%	4.8%	4.5%	4.8%	4.8%
Lower bound	4.4%	4.3%	3.8%	4.1%	4.3%
Rail					
Upper bound	5.7%	5.8%	5.7%	6.1%	5.9%
Midpoint	5.3%	5.4%	5.1%	5.4%	5.4%
Lower bound	5.0%	4.9%	4.4%	4.7%	4.9%
Light rail, bus					
Upper bound	5.6%	5.7%	5.6%	5.9%	5.7%
Midpoint	5.2%	5.2%	5.0%	5.2%	5.2%
Lower bound	4.9%	4.7%	4.5%	4.5%	4.8%
Ferry					
Upper bound	6.0%	6.1%	6.0%	6.3%	6.1%
Midpoint	5.8%	5.7%	5.6%	5.7%	5.7%
Lower bound	5.5%	5.4%	5.2%	5.1%	5.4%
Gas retail					
Upper bound	7.8%	7.5%	7.4%	7.5%	7.5%
Midpoint	7.5%	7.4%	7.3%	7.3%	7.4%
Lower bound	7.3%	7.3%	7.2%	7.1%	7.3%

Note: We developed our WACC approach in early 2014 and 2015 (see the note at the bottom of page 1).

Water

Figure 2 shows the six-monthly WACC range and midpoint estimates over the last three years for the water industry. The WACC for the water industry currently ranges from 4.3% to 5.4%, with a midpoint of 4.8%. Six months ago, we noted in the August 2015 market update that the midpoint WACC was 4.8% for the water industry.

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

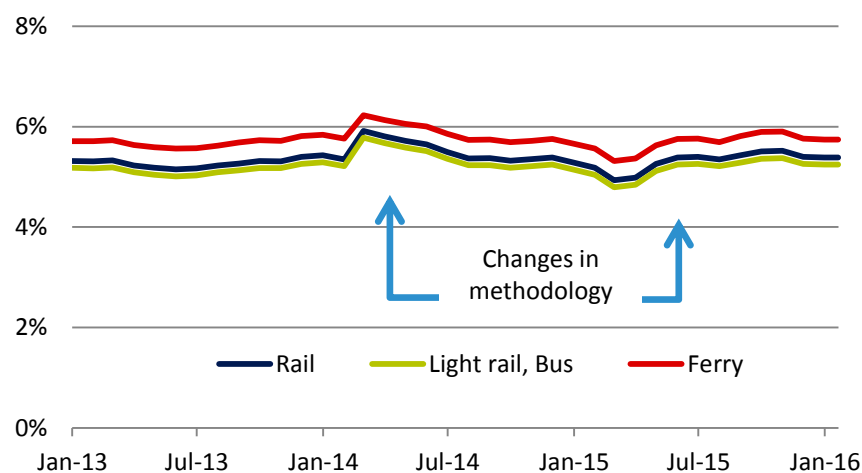


Note: Developments in our WACC approach have been highlighted.

Transport

In December 2015, we made a draft decision on four of the modes of transport that we regulate.³ Figure 3 shows the six-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 draft decision.

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



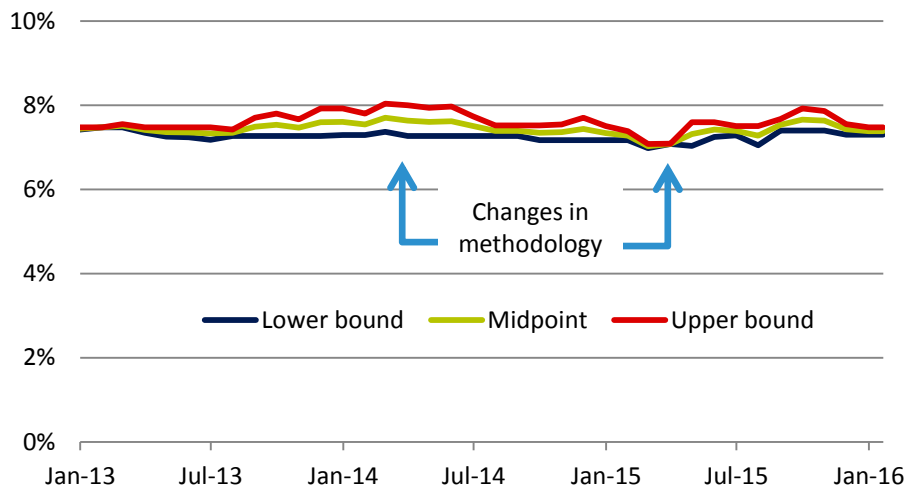
³ See IPART, *Information Paper No 14 – Weighted Average Cost of Capital*, December 2015, available [here](#).

Since the August 2015 market update, the WACC has remained constant when rounded to one decimal place.⁴

Gas retail

Figure 4 shows the six-monthly WACC estimates for the gas retail industry over the last three years. The midpoint WACC to 20 January 2016 is 7.4%. Since the August 2015 market update, the midpoint WACC has increased by around 10 basis points.

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



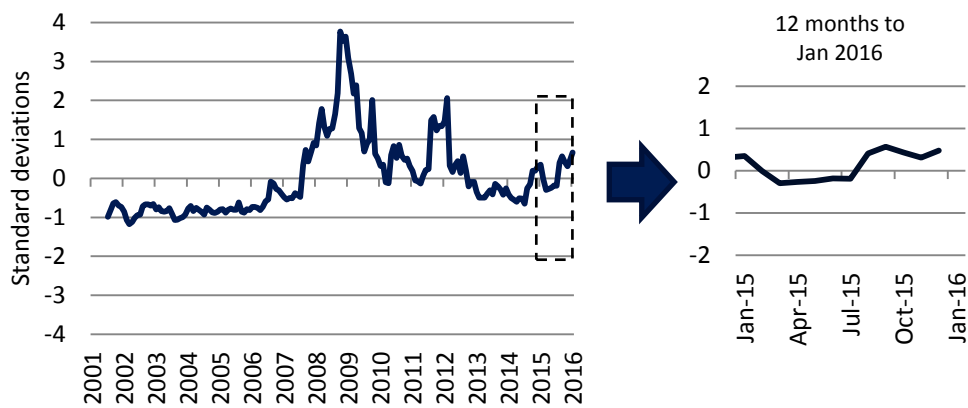
Note: Developments in our WACC approach have been highlighted.

⁴ The previous biannual market update reported a single 'Transport' WACC.

2. Financial market uncertainty index

Our 2013 [Final Report](#) on the WACC methodology sets out our methodology for calculating the uncertainty index. We have updated the uncertainty index to the end of January 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 would use the midpoint WACC to estimate the return on capital invested by the regulated businesses.

Figure 5 IPART's uncertainty index



We have published our uncertainty model on our website. Stakeholders can replicate and monitor our measure of uncertainty. Our model and instructions are available [here](#).

3. Additional market information

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.

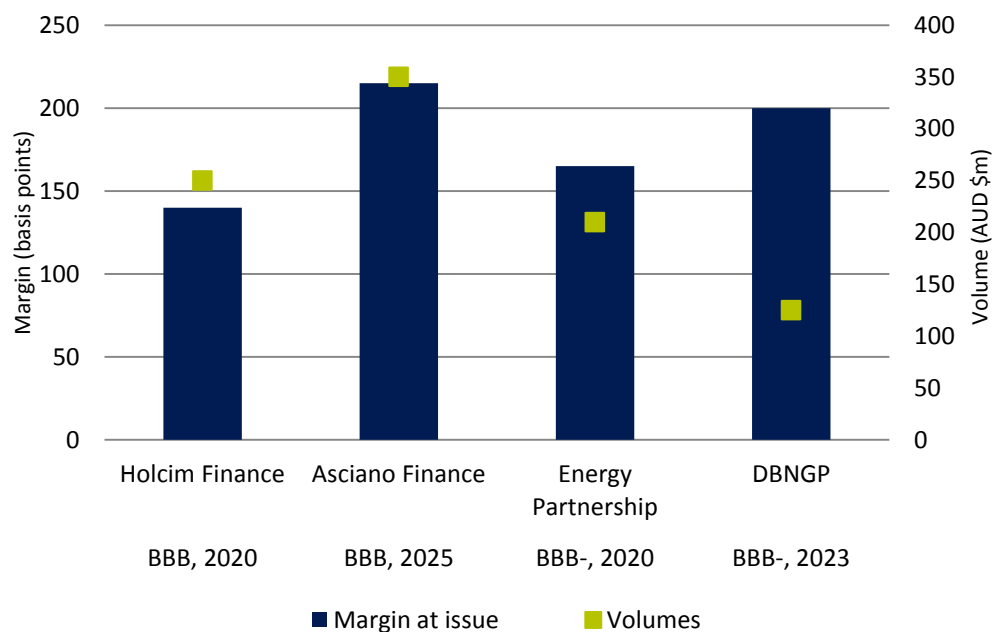
Table 5 Additional financial market and economic information

	Cost of debt	Cost of equity
Market data	Stable	Stable
Analyst and consultant reports	Stable	Stable

Market data

- ▼ While 2014 was the biggest year for Australian initial public offerings (IPO) on record, 2015 IPO volume was down around 60% compared to 2014 due to the absence of large privatisations such as Medibank Private.⁵ There were 66 IPOs in 2015 which raised around \$6 billion.⁶
- ▼ Australian rights issues spiked in 2015. Total rights volumes were \$27 billion in 2015, compared with \$10 billion the year before.⁷
- ▼ Over the last six months, the 40-day measure of the risk free rate has fallen from 2.9% to 2.8%.
- ▼ To the end of January, the RBA's measure of 10-year BBB rated debt indicates a margin of around 308 basis points over the risk free rate.⁸
- ▼ The 3-month bank bill swap rate is currently 2.3%.⁹ It has been relatively stable over the last year.
- ▼ There have been four BBB± bonds recently issued in the Australian market by Australian corporations (Figure 6). The issues range from 5 to 10 years to maturity. Margins ranged from 140 to 215 basis points over the swap rate.¹⁰

Figure 6 Margin at issue date



Note: Margins are expressed over the swap rate at issue.

Source: KangaNews, Thompson Reuters.

⁵ AFR, *Small cap stocks poised to steal the 2016 show: UBS*, 21 December 2015.

⁶ Thompson Reuters News Wire, *Float frenzy makes 2015 a bumper year for bankers*, 4 January 2016.

⁷ AFR, *The company floats set to be the IPO stars of 2016*, 15 December 2015.

⁸ RBA Statistics, *Aggregate Measures of Australian Corporate Bond Spreads and Yields - F3 - Non-financial corporate BBB-rated bonds - Spread to CGS - 10 year*, accessed on 5 February 2016.

⁹ Accessed on 3 February 2016 from Bloomberg, ticker ADBB3M.

¹⁰ KangaNews and Thompson Reuters.

Analyst and consultant reports

- ▼ We have reviewed recent equity analyst and consultant reports for their cost of capital assumptions:
 - When assessing an Australian energy retailer (AGL Energy), ShawandPartners use a risk free rate of 5% and an equity beta of 0.91.¹¹
 - ShawandPartners also assessed two Australian infrastructure companies, Aurizon¹² and Sydney Airport.¹³ ShawandPartners used an equity beta of 0.92 for Aurizon and 0.78 for Sydney Airport. These beta values were used with a risk free rate of 5.0% and an MRP of 6.0%.

¹¹ ShawandPartners, *AGL Energy Downgrade to HOLD from BUY – Price Target of \$16.70 Retained*, 19 November 2015.

¹² ShawandPartners, *Aurizon - Company Report*, 14 January 2016.

¹³ ShawandPartners, *Sydney Airport - Company Report*, September 2015.