

# Weighted average cost of capital (WACC)

Final Report – Information Paper 10

# Introduction

As part of our review, we made a decision on the weighted average cost of capital (WACC) for each of mode of public transport. We used this decision in:

- ▼ calculating the forecast level of cost recovery under our fare determination (discussed in Chapter 11), and
- ▼ estimating the annuitised fleet cost of each mode, which we used in estimating the marginal financial cost (MFC) of each mode in the medium run (discussed in Information Paper 5).

The slides that follow set out our decision on the WACC and outline how we reached this decision.

# Decision - WACC

Our final decision on the real post-tax is compared to our draft decision in the table below.

Mode	Draft decision Real post-tax WACC	Final decision Real post-tax WACC
Ferry	5.9%	<b>5.8%</b>
Rail	5.5%	<b>5.5%</b>
Light rail	5.3%	<b>5.3%</b>
Bus	5.3%	<b>5.3%</b>

# Decision - WACC

## Underlying parameters for the WACC final decision

Parameter	Current	Long term	Midpoint
Nominal risk free rate	2.6%	4.6%	
Inflation adjustment	2.5%	2.5%	
Debt margin	3.0%	2.9%	
Market risk premium	7.6% to 10.6%	5.5% to 6.5%	
Debt to total assets (gearing)			
<i>Ferry</i>	60% to 40%	60% to 40%	
<i>Other modes</i>	60%	60%	
Equity beta			
<i>Ferry, Rail</i>	0.8 to 1.0	0.8 to 1.0	
<i>Light rail, Bus</i>	0.7 to 1.0	0.7 to 1.0	
WACC (real post-tax)			
<i>Ferry</i>	5.6%	6.1%	5.8%
<i>Rail</i>	5.0%	5.9%	5.5%
<i>Light rail</i>	4.9%	5.7%	5.3%
<i>Bus</i>	4.9%	5.7%	5.3%

# Overview of changes since the draft decision

- ▼ Our final WACC values have been calculated using the same WACC methodology as was used in the draft decision. We updated the market-based parameters to 24 February 2016.
- ▼ The WACC for the ferry industry is 10 basis points lower than the draft decision. For the other modes of transport, the WACC value is the same due to rounding.

# Overview of approach

- ▼ Our objective in setting the WACC is to reflect the efficient cost of capital for a benchmark firm that operates in a competitive market and faces similar risks to the regulated business subject to our decision.
- ▼ In line with this objective, in making our decision on the WACC we considered the risks of the four modes of transport.
- ▼ We used our standard WACC methodology as set out in our decisions:
  - ▼ 2013 Review of WACC methodology
  - ▼ New approach to forecasting the WACC inflation adjustment
  - ▼ New approach to estimating the cost of debt.

# Our methodology involves three main steps

1. **Establish a WACC range and midpoint using current market data and long-term averages:**

- ▼ Estimate one WACC range using current market data and another using long-term averages
- ▼ Use the midpoints of the current and long-term WACC ranges as the upper and lower bounds of our final WACC range
- ▼ Take the average of the midpoints of the current and long-term WACC ranges as the final WACC midpoint.

For the final decision, we updated market data using data sampled to 24 February 2016.

2. **Choose a WACC point estimate within the final range based on our *WACC decision rule*.** (The level of economic uncertainty is the key reference point for our decision.)

For the final decision, we selected the midpoint WACC value. This is consistent with our decision rule, as the volatility index is within one standard deviation of the long-term average.

3. **Specify the evidence we considered in choosing the WACC point estimate** (if our decision rule leads us to use a point other than the midpoint of the range).

This step was not necessary as we used the midpoint WACC value.

# Market-based WACC parameters

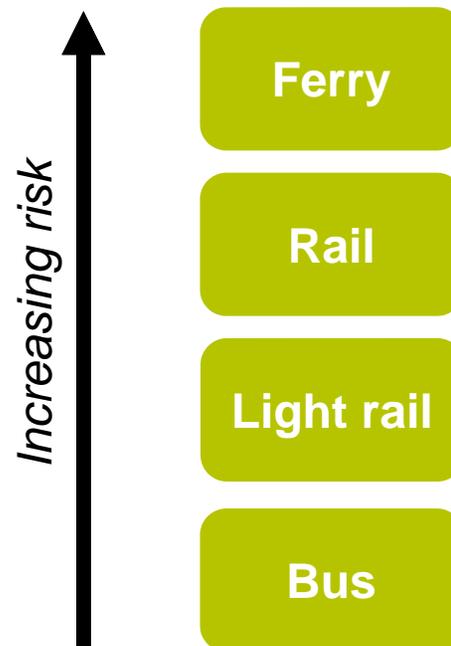
- ▼ Some of the WACC parameters change over time, depending on market conditions.
- ▼ The risk free rate, inflation adjustment and market risk premium are market-based parameters.
- ▼ We calculated these parameters according to our standard approach.
- ▼ Some of the market-based parameters have changed since our draft decision:
  - ▼ The **risk free rate** has decreased slightly. Both the current and the long-term measures of the risk free rate have decreased by 10 basis points since the draft decision.
  - ▼ The **inflation rate** is constant at 2.5%.
  - ▼ The current measure of the **debt margin** has increased by 20 basis points. The long-term debt margin is constant.
  - ▼ The range of the current measure of the **market risk premium** has widened slightly.

# Industry-specific WACC parameters

- ▼ The other parameters – the equity beta, gearing and debt margin – are industry-specific.
- ▼ Our final decision uses the same industry-specific WACC parameters as were used in the draft decision.
- ▼ We estimated these parameters for each mode of public transport. Our WACC values reflect our assessment that the different modes face different levels of risk.
- ▼ We made judgments on the levels of the industry-specific parameters by first analysing data of comparable companies listed on Australian and international stock exchanges. We also considered the relative risks of the modes of transport and conducted a 'sense-check' of our values.

# Relative risks of the modes of transport

- ▼ Our decision on the WACC values implies:
  - ▼ buses face the lowest levels of systematic risk, compared to the other modes
  - ▼ rail and light rail face similar levels of systematic risk
  - ▼ ferries face the highest levels of systematic risk compared to the other modes.



# Relative risks of the modes of transport

- ▼ Relative risks of the modes can be reflected in either:
  - the equity beta (for systematic risks) or
  - the debt margin or level of gearing (for business risks).
- ▼ We considered how the modes of transport could respond to changes in economic conditions:
  - In principle, ferry and bus operators should be able to respond to changes in patronage faster in the short-to-medium term than rail and light rail operators.
  - The assets for providing ferry and bus services (mainly ferries/buses and wharfs/depots) are less specific and can be redirected more readily than light rail and passenger rail network assets.
  - On the other hand, ferries are exposed to greater business risks than the other modes due to the impacts of weather and tourism on their revenue.
- ▼ We also compared how patronage has responded to changes in economic conditions across the modes in the past.