

Independent Pricing and Regulatory Tribunal

Financeability tests in price regulation

Research — Draft Decision August 2013



Independent Pricing and Regulatory Tribunal

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Research — Draft Report September 2013 © Independent Pricing and Regulatory Tribunal of New South Wales 2013

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Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by 18 October 2013.

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by mail to:

Financeability tests in price regulation Independent Pricing and Regulatory Tribunal PO Box Q290 QVB Post Office NSW 1230

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We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be disclosed under the *Government Information* (*Public Access*) *Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act* 1992 (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

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1 Executive Summary

1.1 Introduction

In making price determinations, we consider their likely effect on the regulated business's 'financeability' over the determination period by applying a financeability test. In this report, we outline our draft decisions from the financeability review which commenced in September 2012.

As part of our review, we released a Discussion Paper that explained our current approach to the financeability test. The paper also discussed the main issues to be considered as part of the review, set out our preliminary views on these issues, and sought stakeholder responses.

The purpose of this report is to explain our draft decisions on conducting financeability tests for future price determinations, and invite stakeholder comment on our draft decisions.

1.2 Overview of our draft decisions

1.2.1 Objective of a financeability test

The objective of the financeability test is to assess the financial sustainability of the utility. This means that we assess if a utility will be able to raise finance, consistent with an investment grade-rated firm, during a regulatory period.

Our draft decision is that we will use a financeability test based on a utility's actual gearing ratio and a forecast of their actual interest expense, consistent with our objective for the test. A test based on notional gearing and interest expense, as proposed by stakeholders,¹ is not consistent with the objective of our financeability test.

We agree with stakeholders that there should be a test of the assumptions underlying the rate of return framework and the output from the building block model. However, a notional financeability test is not an appropriate test as other factors unrelated to the rate of return or building block model assumptions affect the financial ratios. Our consultant, Cambridge Economics Policy Associates (CEPA), found that major differences in financial ratios between statutory and regulatory accounts stem from:

- a real regulatory return on capital versus nominal statutory interest expense
- an indexed regulatory asset base versus a non-indexed statutory asset base.

¹ Sydney Water Corporation submission to IPART Discussion Paper: Financeability tests in price regulation, 4 December 2012, p 1.

As part of the current rate of return review we propose to strengthen our engagement with the investment community to check the validity and robustness of our rate of return assumptions.

1.2.2 Elements of a financeability test

Our draft decision is that we will:

- use actual gearing and a forecast of actual interest costs
- use an actual financeability test based on the credit metric benchmarks recommended by Kanangra Ratings Advisory Services (Kanangra) which take into account qualitative and quantitative factors
- analyse key financial ratios against benchmarks as well as financial statements
- ▼ base our benchmark ratios for the financeability test on the analysis by Kanangra, for an investment grade rated utility (Baa3 / BBB-)
- make adjustments to account for operating leases and pension benefits
- use the results of the test as a discussion starter with our stakeholders if the test indicates the possibility of a financeability issue
- ▼ apply the test to water price reviews and reviews under Section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act) for utilities that provide commercial services or services that could be provided commercially by them or other providers.

1.2.3 Implications from applying the financeability test

We consider that the responsibility for addressing short-term financeability issues should rest in the first instance with the utility and its owners. However, if it is not feasible for them to address a financeability shortfall, we may consider a transparent adjustment to regulated prices/revenue that is neutral in net present value terms.

We consider that our draft decision improves the transparency of our approach and provides greater certainty to the businesses we regulate and their customers, while still allowing us scope to respond to the specific circumstances of each determination.

1.2.4 Implementation

We will implement our new financeability policy in our price reviews starting with the publication date of the final decision. Chapter 7 describes in more detail the reviews to which our financeability test will apply.

1.3 Other issues

During the consultations for this review, stakeholders have argued that a utility's financeability will be affected by:

- the initial value of the regulatory asset base (RAB) and the treatment of assets free of charge
- ▼ the difference between depreciation and replacement and renewal capital expenditure
- ▼ real and nominal cash flows.

These are important issues, but we consider they are not relevant to how we propose to conduct the financeability test. We outline our views on these issues in Chapter 6.

1.4 Input to the review

Stakeholders have a further opportunity to make submissions on our draft decisions and the Kanangra and CEPA consultancy reports in Appendices A and B (see Chapter 4 for discussion). We will consider any new evidence not already submitted as part of the Discussion Paper (2012) in our final decision. Submissions are due by 18 October 2013. Late submissions will be assessed on a case by case basis and may not be accepted. We expect to release our final decision in December 2013.

1.5 Structure of this report

The rest of this report explains our review and draft decisions in more detail:

- Chapter 2 provides context for this review
- Chapter 3 explains the objective of our financeability test
- Chapter 4 addresses the elements of our financeability test
- Chapter 5 considers the implications of applying our financeability test
- Chapter 6 considers other issues raised by stakeholders
- Chapter 7 shows how we will implement our new financeability test.

2 Context for this review

Financeability refers to the capacity of a business to finance its activities – including its day-to-day operations and its capital investments to replace, renew and expand the infrastructure required for these activities. In this report, the term financeability is used interchangeably with financial sustainability and financial viability, particularly short-term financial viability.

In this chapter, we discuss the matters that IPART is required to consider as part of price reviews and provide background information on IPART's previous financeability policy.

2.1 Scope of the review

In this review, we are looking at the specification, application and interpretation of the financeability tests. This means:

- What are the different elements of our financeability test?
- How do we apply it in price reviews?
- How financeability issues can be resolved?

We are not revisiting the objectives of the financeability test and its role in determining prices, which are set out in more detail in *Financeability Tests and their Role in Price Regulation*, January 2011.

Although our Discussion Paper did not consider whether the financeability test should be based on notional or actual inputs, stakeholders expressed a preference for a notional financeability test.² We engaged CEPA to assist with understanding the results from a notional financeability test. We consider the notional financeability test is not consistent with the objective of a financeability test.

2.2 Review process

We released a Discussion Paper on our financeability test in September 2012 and sought written submissions from stakeholders. We then held 2 workshops with stakeholders in February and April 2013. Stakeholders are invited to provide written submissions to this Draft Report by 18 October 2013 before we release our final decision in December 2013.

² Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 1.

2.3 Matters we are required to consider

The IPART Act³ does not require us to undertake a financeability test as part of our pricing determinations.

Under Section 15 of the IPART Act, the Tribunal is required to consider, among other matters:

- ▼ the impact on pricing policies of the borrowing, capital and dividend requirements of the government agency concerned and in particular, the impact of any need to renew or increase relevant assets (Section 15(1)(g))
- ▼ the standards of quality, reliability and safety of the services concerned (section 15(1) (l)).

We do not determine the financing and dividend policies for utilities – these are matters for their managers and owners. However, if a utility is not financially sustainable this may affect its ability to:

- fund the provision of services
- service and repay debt and meet reasonable dividend requirements
- access debt markets for new borrowing requirements.

Further, if a regulatory decision meant that an otherwise efficient and wellmanaged utility were unable to fund its operation, the credibility of the regulatory regime could well be questioned.

2.4 Our 2011 financeability policy

Under the financeability test set out in 2011⁴ we:

- determined the appropriate risk profile for the regulated business (very low, low, average, high or very high), based on the risk category assigned to it by NSW Treasury
- measured the business's likely financeability in each year of the determination period by using its forecast cash flows and its **actual gearing ratio** to compute the following financial ratios:
 - funds from operations cover
 - funds from operations/total debt
 - debt gearing
 - pre-tax interest cover

³ Some reviews may take into account different considerations. For example, we regulate electricity and gas retail prices under the *Electricity Supply Act 1995* and *Gas Supply Act 1996* respectively and bus and ferry fares under the *Passenger Transport Act 1990*.

⁴ IPART, Financeability tests and their role in price regulation – Final Decision, January 2011, pp 1-2.

- computed its likely or notional credit rating in each year of the determination period, based on the appropriate risk profile and these financial ratios
- determined whether the business faces potential financial concerns over the determination period by identifying any years when its notional credit rating falls below our benchmark credit rating of between BBB+ and BBB
- identified the likely reasons why the notional credit rating is below this benchmark.

3 Objective of the financeability test

In the Discussion Paper, we maintained that financeability is defined as the capacity of a business to finance its activities - including its day-to-day operations and its capital investments to replace, renew and expand the infrastructure required for these activities. The objective of a financeability test is to assess the financial sustainability of the utility during a regulatory period. This means we assess if a utility will be able to raise finance, consistent with an investment grade rated firm, during a regulatory period.

We indicated in our Discussion Paper⁵ that we will continue using an actual gearing ratio in our financeability test, consistent with our stated objective in the 2011 policy.⁶ We undertook a full review of the financeability test in 2010/11. In the 2010/11 review we decided to use a financeability test based on actual gearing with the support of most of our stakeholders at the time.

For this review, stakeholders⁷ now argue that the test should be based on notional gearing and interest rates inherent in the rate of return model.

In this chapter we outline the objective of the financeability test and examine the differences between a financeability test based on notional and actual gearing and debt costs. We consider the 2 tests have different purposes and that a test based on actual gearing and debt cost is consistent with our stated objective for the financeability test.

⁵ IPART, *Financeability tests in price regulation – Discussion Paper*, September 2012, p 12.

⁶ IPART, Financeability tests and their role in price regulation – Final Decision, January 2011, p 10.

⁷ For example, Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 1; Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 3.

3.1 Stakeholders' views

All submissions received, except that from Wyong Shire Council,⁸ express a preference for the use of the notional interest rate with notional gearing. Stakeholders⁹ expressed similar views at the workshop.

Stakeholders in favour of notional gearing contend that:

- it is consistent with the revenue requirements of the building block model
- ▼ it provides a check on whether the notional regulated utility with a benchmark capital structure passes the financeability test
- ▼ it avoids the distorting incentives from using actual gearing including the incentive to adopt a risky capital structure by increasing the gearing level.

Stakeholders¹⁰ in favour of notional gearing also argue that if a notional regulated utility with a benchmark capital structure fails the financeability test, then this indicates that the revenue provided under the price path is insufficient for long term business sustainability.

3.2 Our analysis

The purpose of our financeability test is to assess if a utility could obtain additional financing in financial markets based on their current actual financial position, consistent with an investment grade firm. This is a short term test, for the next 4 to 5 years of a determination period.

Our approach to setting prices ensures that utilities are financially sustainable for the long term. Under the building block model, we set prices to cover the efficient costs of a benchmark business. This includes a market-based rate of return for equity and debt holders. In the short term, however, there may be many factors, such as fluctuations in market conditions, that cause difficulties for utilities in obtaining finance at reasonable rates. A financeability test based on actual gearing and interest rates is needed to assess the short-term impact of our price decisions.

⁸ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 35; Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 3; Sydney Catchment Authority submission to IPART Discussion Paper, 29 November 2012, p 2; Sydney Desalination Plant submission to IPART Discussion Paper, 9 November 2012, p 2.

⁹ For example, Sydney Water Corporation.

¹⁰ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 2.

3.2.1 Comparing the actual and the notional financeability tests

Table 3.1 compares the calculation of key financial ratios under a notional and an actual test.

Ratio	Actual test	Notional test	Comment
1. Interest coverage [Funds from operations (FFO) + interest expense] / interest expense	Actual interest expense	Interest expense = RAB * notional gearing ratio * notional interest rate	If notional gearing > actual gearing, the notional ratio will look weaker than the actual ratio.
2. Net debt to RAB Net debt / RAB	Actual net debt	Net debt = RAB * notional gearing ratio	If notional net debt > actual net debt, the notional test will look weaker. Note this will depend on both the difference between actual and notional gearing and the difference between total assets and RAB.
3. FFO to net debt FFO / net debt	Actual net debt	Net debt = RAB * notional gearing ratio	If notional net debt > actual net debt, the notional test will look weaker. Note this will depend on both the difference between actual and notional gearing and the difference between total assets and RAB.
 4. Retained cash flow to CapEx [FFO – dividends] / capital expenditure 	Dividends assumed to follow 75% payout ratio.	Dividends are set to ensure the notional gearing ratio is maintained.	Going from actual to notional, dividends are adjusted to achieve and maintain the notional gearing ratio (ie, an equity buy back occurs in year 1 and dividends are assumed to adjust in future years to maintain the notional gearing ratio).

 Table 3.1
 Actual and notional financial ratios

Under a test based on actual gearing and interest rate, utilities may engage in excessive gearing to benefit from a revenue adjustment. We consider that if the underlying reason for any financeability issues is excessive gearing, then responsibility rests with the utility to refinance its activities by reducing dividends or seeking an equity injection. In such instances, no revenue adjustment would be warranted.

Using data for the Sydney Water Corporation (SWC), we compare the key financial ratios under both the actual and notional test, as shown in Figures 3.1 and 3.2. While we do not target a specific credit rating, we have included a target level for an investment grade credit rating.

Figure 3.1 SWC - FFO interest cover



Note: IPART's own analysis. Ratios are based on current debt levels as advised in the 2012 SWC Annual Information Return (AIR) and are therefore different to the debt levels used in the 2012 review.



Figure 3.2 SWC - FFO to net debt ratio

Note: IPART's own analysis. Ratios are based on current debt levels as advised in the 2012 SWC AIR and are therefore different to the debt levels used in the 2012 review.

Figure 3.1 and Figure 3.2 indicate that:

- The FFO interest cover ratio is consistently higher using the actual test.
- The FFO interest cover ratio remains above the target level for the actual and notional tests.

The decreasing trend in actual FFO interest cover and FFO to net debt is primarily due to SWC's gearing ratio rising from 34% to 46% since 2005/06.

We engaged CEPA to analyse the different results of a financeability test using statutory and regulatory accounts. CEPA's results suggest that the regulatory building block model provides sufficient cash flows to finance the efficient costs of a business. CEPA also found that major differences in financial ratios between statutory and regulatory accounts stem from:¹¹

- utilities receiving a real return on capital (regulatory) but paying interest expenses in nominal terms (statutory)
- an indexed RAB versus a non-indexed statutory asset base.

Overall, we consider that there are factors, unrelated to the rate of return assumptions that may cause a utility to fall short of the financial ratio benchmarks under a notional financeability test. Chapter 6 discusses these issues in more detail.

3.3 Draft decision

We consider the purpose of a financeability test in price reviews is to assess the short-term financial situation of the utility. It follows that a test based on the actual gearing and interest rates is consistent with our objective.

We agree with stakeholders¹² that there should be a test of the assumptions underlying the rate of return framework and the output from the building block model. However, a notional financeability test is not an appropriate test as there are other factors that affect the financial ratios, unrelated to the rate of return or building block model assumptions. Under a real return on capital framework, notional financial ratios are affected by the fact that utilities receive a real rate of return and part of the return is capitalised in the form of an indexed RAB. As part of the current rate of return review, we propose to strengthen our engagement with the investment community to check the validity and robustness of our rate of return assumptions.

¹¹ CEPA, Financeability ratios in Regulatory and Statutory Accounts, 23 July 2013, p 3.

¹² See for example Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, pp 9-10.

4 Elements of a financeability test

In the Discussion Paper, we consulted on the following elements of a financeability test:

- the financial ratios used
- the benchmarks for these ratios
- the ranking of financial ratios
- estimates of the cost of debt
- adjustments to the financial statements.

The following sections outline our draft decisions on the elements of a financeability test. Our draft decision on the benchmark financial ratios has been informed by our consultant David Howell from Kanangra. We propose to assess the financial ratios together with a utility's financial statements. On estimating the actual cost of debt, we will use a utility's forecast as well as market evidence. Our draft decisions on ranking of financial ratios and making adjustments to financial statements are unchanged from our Discussion Paper.

4.1 Stakeholders' views

Stakeholders mostly agreed with the preliminary views in our Discussion Paper:

- ▼ Financial ratio benchmark: Moody's ratios were appropriate.¹³
- Ranking of financial ratios: all stakeholders, except for Wyong Shire Council, supported the ranking of financial ratios.¹⁴ Further, stakeholders propose the adoption of the same weights as used by Moody's. Wyong Shire Council submitted that ratios should be considered in their own merit and not be ranked.
- Adjusting financial statements: stakeholders commented that when actual interest rates and gearing are used, it is appropriate to adjust notional financial statements for operating leases and pension obligations.¹⁵

¹³ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 1; Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 3; Sydney Catchment Authority submission to IPART Discussion Paper, 29 November 2012, p 8; Wyong Shire Council submission to IPART Discussion Paper, 30 November 2012, p 2.

¹⁴ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 11; Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 5; Sydney Catchment Authority submission to IPART Discussion Paper, 29 November 2012, p 8; Sydney Desalination Plant submission to IPART Discussion Paper, 9 November 2012, p 2; Wyong Shire Council submission to IPART Discussion Paper, 30 November 2012, p 2.

¹⁵ Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 5.

 Floor for the financeability test: stakeholders expressed a preference for using a notional financeability test consistent with the gearing level and the ratings benchmark in the rate of return framework.¹⁶

4.2 Our analysis

4.2.1 Financial ratio benchmarks

We engaged David Howell from Kanangra to advise on a set of benchmark credit metrics that can guide our assessment of whether utilities can raise finance over a regulatory period consistent with an investment grade firm. The Kanangra report provides guidance on interpreting quantitative and qualitative factors in a credit rating assessment. The recommended benchmarks take into account specific qualitative factors relevant for the NSW utilities sector. Kanangra's full report can be found in Appendix A.

Kanangra proposes 3 ratios:17

- ▼ **FFO interest cover:** calculated as FFO plus interest expense divided by interest expense. This is a coverage ratio and measures a utility's ability to service its debt prior to repayment.
- Debt gearing (regulatory value): calculated as debt divided by the regulatory value of fixed assets plus working capital. This is a leverage ratio and measures a utility's ability to repay its debt.
- ▼ **FFO over net debt:** calculated as FFO divided by net debt. This is a more dynamic measure of leverage than debt gearing and a useful indicator of a utility's ability to generate cash flows.

The ratios and benchmarks recommended by Kanangra are outlined in Table 4.1.

	A3	Baa1	Baa2	Baa3	Ba1
FFO/interest	>2.9	2.3x–2.9x	1.7x-2.5x	1.4/1.5x- 1.7x	<1.4/1.5
Debt/RAB	<60%	80%-85%	60%-91%	90%->100%	>100%
FFO/debt	>10%	>10%	<6-10%	5-8%	<4%

Table 4.1 Financial ratio benchmarks

Source: Kanangra.

¹⁶ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 11.

¹⁷ Kanangra, Report to IPART Concerning Credit Ratings, May 2013, p 8.

Kanangra does not propose a benchmark for the retained earnings to capex ratio we used in our previous test. We understand that this ratio has limited impact on the credit rating assessment process for global regulated water utilities. While we accept Kanangra's recommendation not to include this ratio, we consider that for consistency, it is important to continue monitoring this ratio as part of our financeability assessment.

As discussed previously, the purpose of the financeability test is to assess if the utility will be able to raise finance consistent with an investment grade firm. We propose to use the ratios for Baa3 (equivalent to Standard & Poors BBB-) as a guide in that assessment.

4.2.2 Ranking of financial ratios

Moody's published rating methodology for global regulated water utilities provides weights for its financial ratios.¹⁸ As explained in our Discussion Paper, we do not intend to assign a fixed quantitative weight to the ratios. Rather, we would consider that the first 2 ratios in Table 4.2 are relatively more important than the last 2 ratios. This approach provides guidance to stakeholders and allows us to consider the quantitative analysis in full.

Table 4.2	Moody's weightings for financial ra	tios
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Financial ratio	Moody's overall weight in rating
FFO interest coverage	15%
Net debt to regulated asset base	15%
FFO to net debt	5%
Retained cash flow to capex	5%

Source: Moody's Investors Service, Rating Methodology Global Regulated Water Utilities, December 2009.

4.2.3 Estimating the actual cost of debt

The cost of debt is a function of the level of gearing and average interest rate on the debt. Under a test based on actual gearing and interest cost, we will need to forecast actual interest cost based on information provided by the utility, and our analysis of publicly available information.

In the 2012 SWC price review, we used the forecast actual interest expense provided by the utility in our financeability test. In our 2013 Hunter Water price review, we compared Hunter Water's forecast interest expense to the general trend in the 10-year trailing average of the NSW Government bond 10-year nominal rate. We found that the actual interest expense was likely to be lower than that forecast by Hunter Water, possibly due to a timing issue between its

¹⁸ Moody's Investors Service, Rating Methodology Global Regulated Water Utilities, December 2009, p 6.

forecast and our price review. Our forecast of interest expense for the Hunter Water price review took into account market trends.

4.2.4 Using financial ratios and financial statements

While the financial ratio benchmarks are useful to our assessment of a utility's financial sustainability, it is prudent to review other available evidence in our overall assessment.

In the 2012 SWC price review and the 2013 Hunter Water price review, we also reviewed their financial statements and assessed their ability to fund capital expenditure and pay dividends.

4.2.5 Adjusting financial statements before calculating financial ratios

Moody's makes a number of adjustments to financial statement figures prior to computing financial ratios. These adjustments are made to reflect the actual ability of a business to repay its debts. We consider these adjustments are reasonable and should form part of the financeability test.

There are 2 major adjustments published by Moody's:19

- Operating lease adjustments are made to take into account that leases reduce a business's capacity to borrow. For operating leases, businesses do not recognise debt in their balance sheet, even though they are contractually obligated to make lease payments and a failure to do so often triggers default. The standard Moody's methodology to capitalise operating leases consists of:
 - A balance sheet adjustment by adding debt and fixed assets. The value of debt is computed by using a factor between 4 and 10 times, or, if the present value of the minimum lease commitments (using the incremental borrowing rate as the discount rate) is higher, using the present value.
 - An income statement adjustment by reclassifying one-third of the rent expense to interest expense and the remaining two-thirds rent to "Depreciation – Capitalised Operating Lease" (a component of operating profit), and adjusted operating expenses.
 - A cash flow statement adjustment by reclassifying a portion of the rent expense from operating cash flow to financing cash outflow (CFF). Moody's also simulates capital expenditure for newly acquired leased assets by increasing the capital expenditures line in investing cash flows with a concomitant borrowing in CFF to fund capital expenditure.

¹⁹ Moody's Investors Service, Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations, 21 December 2010, pp 6-10.

- Pension obligation adjustments are made to reflect the fact that any underfunded obligations relating to future defined benefit payments should be treated as debt. The standard Moody's methodology on underfunded defined benefit pensions consists of:
 - A balance sheet adjusted by recording as debt the amount by which the defined benefit pension obligation is underfunded.
 - **An income statement** with pension expenses adjusted to eliminate smoothing. Net periodic pension income is excluded.
 - A cash flow statement recognising only the service cost as an outflow from cash from operations. Employer cash pension contributions in excess of the service cost are reclassified from an operating cash outflow to a CFF. The cash flow statement is not adjusted if pension contributions are less than the service cost.

4.3 Draft decision

Our draft decision is that we will use the financial ratio benchmarks provided by Kanangra as part of our financeability test. This is based on published Moody's methodology and credit ratings for relevant utilities. We will use the benchmark ratios of a Baa3 firm as a guide in assessing whether a utility is able to obtain finance, consistent with an investment grade firm. While we expect that financial ratios are generally within the investment grade level of our benchmarks, we do not expect a utility to meet every ratio in every year of a determination period.

Stakeholders commented that up to 60% of a credit rating is based on qualitative factors.²⁰ The benchmark financial ratios developed by Kanangra take account of qualitative factors, using publicly available credit ratings. Most of the qualitative rating is based on the regulatory framework. Kanangra found that for water utilities, where the same or similar regulatory framework applies, benchmark financial ratios can be used as a guide.

We propose to rank our financial ratios in order of importance. This allows us to focus on the ratios that are most relevant for us when assessing the likely financial sustainability of a utility. Stakeholders supported the ranking of financial ratios.²¹

We consider the financial ratio benchmarks should be used as a guide in our financeability assessment. We will also review a utility's financial statements, particularly its cash flow statement, and assess its ability to fund capital expenditure and dividends.

We will use a utility's forecast actual interest expense and adjust it, if necessary, to reflect current market conditions for interest rates and credit spreads.

²⁰ Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 5.

²¹ Hunter Water Corporation submission to IPART Discussion Paper, 30 November 2012, p 5.

We propose to make adjustments for operating leases and pension benefits. The proposed adjustments are based on Moody's published methodology.²²

We will not issue a notional credit rating as part of our financeability test. The test is designed to assess a utility's ability to finance its operations during a regulatory period. We do not consider that we are best placed to estimate notional credit ratings and the potential risks involved in getting such a rating wrong outweigh the benefits in our opinion. Instead, we will use financial ratio benchmarks and other financial information to guide our overall assessment of a utility's financeability over a regulatory period.

5 Implications from applying the financeability test

In our Discussion Paper, we outlined a number of possible actions that may be taken if the financeability test shows there are short term financial sustainability issues. These are:

- refer the issue to the shareholder/owner of the utility
- make a net present value (NPV) neutral adjustment.

Our preferred position in our Discussion Paper was to limit any adjustments to NPV-neutral approaches. Stakeholders argued that customers are not best placed to face this type of risk, nor should they be acting as a bank to the utility.²³

In the following sections, we assess stakeholders' arguments for NPV-positive adjustments. Consistent with the objective of the financeability test as outlined in Chapter 3, we consider that the prime responsibility to address short term financial concerns rests with the owner and that any regulatory adjustments, if necessary should be NPV-neutral.

5.1 Stakeholders' views

Stakeholders argued that if a utility fails the notional test, a NPV-positive adjustment should be provided.²⁴ In their opinion, failing the notional test would indicate that the weighted average cost of capital (WACC) is set too low and the utility would be unable to recover this revenue shortfall in the future. Hence, a NPV-neutral approach, where the financeability adjustment has to be returned to customers, is not appropriate.

²² Moody's Investors Service, Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations, 21 December 2010, pp 6-10.

²³ Sydney Desalination Plant submission to IPART Discussion Paper, 9 November 2012, pp 7-8.

²⁴ Sydney Water Corporation submission to IPART Discussion Paper, 4 December 2012, p 2.

Stakeholders further argued that customers are not best placed to act as a bank to the utility when financeability issues occur. ²⁵ If a financeability problem occurs, it is likely that a utility would seek additional finance from banks or their shareholders.

5.2 Our analysis

In our Discussion Paper, we explained that providing a NPV-positive financeability adjustment equates to adjusting the WACC. We set our WACC with reference to data for comparable benchmark companies operating in similar environments and facing similar levels of risks. We also regularly review our methodology to estimating the WACC. We therefore do not consider adjustments to the WACC are appropriate to address potential financeability issues.

In the first instance, we will investigate any root causes for a financeability issue in our own models. In the case that a financeability issue stems from our models, we will rectify it. In the case of a potential financeability issue, however, we would refrain from making any ad hoc adjustments.

5.3 Draft decision

We understand our stakeholders'²⁶ concerns about the potential impacts on customers of using a NPV-neutral adjustment to remedy a utility's financeability issues. Our draft decision is that responsibility for addressing financeability issues rests in the first instance with the utility and its owners.

We would expect that any adjustment — if made — should be NPV-neutral so that outcomes over several regulatory periods are not biased against the interests of consumers.

6 Other issues

Our building block model is designed to calculate prices that recover a utility's full, efficient costs over the determination period, and over the life of its assets. The model takes account of a utility's operating costs, maintenance costs and allowances for a return of and on invested capital. Our approach supports an efficient utility's long-term financial viability. However, in practice, financeability problems can arise due to:

poor financial management and/or excessive operating costs

²⁵ Sydney Desalination Plant submission to IPART Discussion Paper, 9 November 2012, p 8.

²⁶ Sydney Desalination Plant submission to IPART Discussion Paper, 9 November 2012, p 8.

 a mismatch between revenues and costs due to a mismatch between building block model assumptions (which affect the timing of revenues) and management/ownership decisions (which affect the timing of costs).

Stakeholders have raised a number of issues through their submissions and at the workshop that they argue may impact on a utility's financeability.

These issues can be grouped into 2 broad categories:

- Issues relating to the RAB:
 - the value of the RAB (including the treatment of assets free-of-charge)
 - the depreciation allowance.
- Issues relating to the differences between real and nominal data:
 - the impact of using a real as opposed to nominal WACC
 - the impact of calculating financeability ratios in real or nominal terms.

These issues are inter-related. For example, the choice between real versus nominal WACC affects whether or not the RAB is indexed to inflation, which itself affects the depreciation allowance over time.

In this chapter we analyse the issues raised by stakeholders. We find that there are insufficient reasons or evidence to depart from our current policy. Our model is designed to allow a utility to recover its efficient costs over the long term. We understand that regulated utilities in NSW all have a credit rating consistent with investment grade and are likely to maintain their investment grade credit rating. Under our proposed financeability test, if we assess that utilities could not obtain finance in the short term, consistent with an investment grade-rated firm, we will consider the need for NPV-neutral adjustments (Chapter 5).

6.1 Issues relating to the regulatory asset base (RAB)

The RAB is an estimate of the value of capital employed by a utility at a point in time. The RAB is a key input to the building block model and affects prices through 2 channels:

- the capital charge (ie, return **on** capital)
- the regulatory depreciation allowance (ie, return **of** capital).

The larger the RAB, the higher the capital charge, the regulatory depreciation allowance and, ultimately, regulated prices.

Box 6.1 IPART's position on the initial RAB and depreciation

We have previously set the initial RAB for water utilities equal to the present value of revenues expected to be generated by the utility's assets. These initial RAB values were less than estimates of the replacement cost of these assets. Valuing the initial RAB based on the present value of future revenues allows for a transition to a higher RAB as assets are renewed or replaced over time. This ensures price stability and regulatory certainty. Our views are:

- 1. Valuing the initial RAB based on the then present value of future revenues is consistent with commercial practice. A privately held utility would value its own asset base using the same approach.
- 2. Valuing the initial RAB based on replacement cost of assets would have:
 - a) overstated the RAB by including unproductive assets and assets that have been fully cost recovered, paid for by taxpayers or new customers
 - b) resulted in initial price shocks and ongoing high prices that do not reflect the underlying economic costs of the utilities.
- 3. As existing assets are renewed and replaced, these investments are added to the asset base such that utilities will earn both a return on investment and a depreciation allowance to maintain the value of this investment over time.

Once we set the initial RAB, it is indexed but not otherwise subject to revaluation (note the RAB is also adjusted each period per the formula in Section 6.1.1). This provides for regulatory certainty and price stability. Similarly, we do not consider a change to our depreciation allowance policy is warranted. Our views are that:

- 1. There is not a direct connection between the level of depreciation and expenditure on asset replacement or renewal.
- Adjustments to depreciation (such as accelerated depreciation) could lead to negative unintended consequences.

6.1.1 Initial RAB value

Our regulatory model requires an initial estimate of the utility's asset base. For water utilities, we generally set the initial RAB with reference to the present value of the expected future revenue stream generated by the utility's assets. This approach is consistent with widely accepted valuation principles.

Once we set the initial RAB, it is locked in and not subject to re-valuation. This provides regulatory certainty and ensures consumers are not exposed to price shocks due to asset valuations. We do, however, adjust the RAB each period to account for asset disposals, depreciation, renewal, and the addition of new assets as follows:

RAB_t = RAB_{t-1} - disposals - depreciation + renewal capex + new capex

Our approach of setting the initial RAB is consistent with the concept of financial capacity maintenance (FCM) which is most commonly used in business and regulation.²⁷ As Pardina, Rapti and Groom highlight, there are a range of approaches to setting the RAB and no strong theoretical argument in favour of one over another. However, the RAB is a key element of the regulatory framework. Subsequent changes to the RAB – other than through its formulaic updating – create risk and uncertainty for a utility and its customers.

Our approach is consistent with principles for business valuation and the setting of the asset bases for the RABs for the regulated energy and water businesses, for example, in the UK. The initial RAB reflects the financial capital of the business valued on the basis of projected earnings at the time.

Several stakeholders have argued that the initial RAB is too low. They argue that because of the initial low RAB, the return on capital (ie, capital charge) is insufficient to recover a utility's efficient cost of capital. Similarly, stakeholders have argued that the depreciation allowance would also be too low to maintain the value of assets. These stakeholders maintain that the initial RAB should have been set with reference to the replacement cost of a utility's total asset base.

Our view is that setting the initial RAB using replacement costs would have overstated the value of assets for pricing purposes, unless adjusted. A utility's asset base may consist of assets that were given to the utility free-of-charge, taxpayer-funded or fully cost-recovered. Including these assets in the RAB could result in utilities over-recovering the efficient cost of capital and in consumers paying for the assets twice.

Using replacement cost to value the initial RAB also means the value of stranded assets and assets not utilised for productive purposes is included in the asset base, unless adjusted.

²⁷ Financial capacity maintenance (FCM) refers to maintaining the value (in nominal or real terms) of the financial capital of the company. Under real FCM, the asset base is indexed by a measure of general purchasing power and profit is measured after provision has been made for the maintenance of the value of the financial capital in the entity. (See Pardina, Rapti and Groom, *Accounting for Infrastructure Regulation*, World Bank, 2008, pp 196-8.)

The Productivity Commission (PC) considered the issue of asset valuation in its *Inquiry Report* – *Australia's Urban Water Sector*. The PC concluded that it is reasonable to take a 'line in the sand' approach for assets acquired before the determination of an initial RAB, and to value assets commissioned after that date at their replacement cost.²⁸ The PC also considered the option to value existing assets at their replacement costs and concluded that:

If an infrastructure owner had recovered the cost of an investment, and a DORC [ie, replacement cost] valuation allowed increased returns, this would provide an element of economic rent to the infrastructure owner.²⁹

A key consideration in evaluating the appropriateness of the initial RAB is whether it is sufficient to allow a utility to sustain a healthy capital structure (ie, mix of debt and equity) over time. The following chart illustrates SWC's capital structure since its initial RAB was set in 2000.



Figure 6.1 SWC capital structure 1999/00-2011/12

Source: IPART analysis.

²⁸ Productivity Commission, Inquiry Report – Australia's Urban Water Sector, No. 55, 31 August 2011, pp 276-277.

²⁹ Ibid, pp 274-275.

Figure 6.1 shows that when SWC's initial RAB was set in 2000, this resulted in a very low actual gearing ratio (ie, approximately 34% of its RAB was funded by debt). This is consistent with a very low degree of financial risk. Over time as assets are renewed and rolled into the RAB, SWC's actual gearing ratio has increased. SWC's actual gearing ratio (currently between 40 to 50%) is still significantly below the efficient gearing ratio of 60% assumed in our building block approach.

Our view is that valuing initial RAB by considering an asset's revenue generating capacity is appropriate and is unrelated to the replacement costs of the assets. Revaluing a utility's RAB using replacement costs would overstate the value of assets for pricing purposes, unless adjusted. The prudent and efficient costs of assets as replaced will be added to the RAB when incurred.

Maintaining the line in the sand RAB value provides regulatory certainty and price stability. We consider it unlikely that the benefits of re-opening this issue will outweigh the costs.

6.1.2 Depreciation

In principle, the remaining service lives — and income earning potential — of most existing assets decline over time. If the services provided by a utility are to be maintained, it needs to renew and replace these assets. Under the FCM approach, the decline in service lives — and hence income earning potential of the initial financial capital — is allowed for through depreciation. Separately, expenditure on the replacement and renewal of those assets is added to the RAB.

Depreciation is a non-cash expense. Hence, its inclusion in the building block model to determine regulated revenues provides 'surplus' cash to finance a utility's operation, including requirements for new investment. A higher allowance for depreciation in a period will result in higher revenues and cash flows in that period, but lower revenues and cash flows in future periods. However, under FCM there is no direct connection between the level of depreciation and expenditures on asset replacement and renewal. While it generates cash for a utility, depreciation does not equal the funding requirements for asset replacement.

Making adjustments to the depreciation allowance could have undesirable consequences. For example, UK energy regulator Ofgem indicated in early 2010 that it would move away from accelerated depreciation after it became clear that regulated companies would face a large reduction in depreciation allowance for existing assets once those assets had become fully depreciated.³⁰

³⁰ Ofgem, Regulating Energy Networks for the Future: RPI-X@20. *Emerging Thinking – Embedding financeability in a new regulatory framework*, 20 January 2010, p 8.

An accelerated depreciation method could also have intergenerational equity issues as existing customers are effectively paying for future customers' use of the same assets. We do not consider there are sufficient reasons to warrant a change in our depreciation allowance policy.

6.2 Issues relating to the effect of modelling in real or nominal terms

6.2.1 The impact of using a real WACC

Our building block model is designed to generate prices for the regulatory period quoted in real dollars. These real dollar prices are then adjusted to nominal dollar prices using actual inflation data as we progress through the regulatory period. The 2 key benefits of this approach are:

- published prices accurately reflect the utility's economic costs
- prices adjust throughout the regulatory period in line with actual inflation.

This approach, which requires all input values to the building block model to be entered in real terms, may result in insufficient cash flows to cover financing costs. This relates specifically to situations where the utility raises debt denominated in nominal terms while its regulated prices are calculated based on a real WACC. Appendix C describes the differences between nominal and real WACC.

Figure 6.2 below illustrates a simplified example of the cash flow mismatch between a nominal cost of capital (flat line) and a real return on capital (increasing line). Suppose \$100 of capital is invested at time 0 at a cost of 5% p.a. (nominal) and inflation is constant at 2.5% p.a. The cost of capital remains fixed at 5% of \$100 or \$5 p.a. The return on capital begins at a relatively low level of approximately 2.5% of \$100 or \$2.50 p.a. However, over time as the inflation component is capitalised into the asset base (ie, the \$100 grows at 2.5% p.a.), the return on capital (under a real WACC framework) grows.



Figure 6.2 Real versus nominal returns

Note: IPART's analysis.

Figure 6.2 illustrates 2 important points: 1) over the life of an asset, the cash flow streams are similar in NPV terms, and 2) as we move forward, the potential impact this may have on a utility's financeability decreases.

We have identified 2 potential responses to this issue:

- Response 1: a utility could choose to finance itself in real terms. This would result in a better match between its cost of capital and the WACC built into prices. For example, a utility could raise funds through capital indexed bonds. This would involve the utility paying a real interest rate in cash and having the inflation component capitalised into the principal of its bonds. This would provide for better matching of cash flows and a stronger link between the value of debt outstanding and the RAB, which would both be indexed to inflation.
- Response 2: the regulatory model could be changed from real to nominal. This would require us to explicitly build an inflation forecast into published prices. Both utilities and consumers would be exposed to inflation risk (ie, when actual inflation is different from forecast inflation).

While Response 1 would reduce cash flow risk, which is likely to be taken into account by rating agencies, it may not affect a utility's overall credit rating. This is because Moody's current methodology on financial metrics treats the inflation component of the cost of debt as an expense, regardless of whether it is incurred as a cash expense or capitalised into the bond's principal.

On balance, we consider the benefits of moving to a nominal model do not outweigh the costs. A model in real terms more accurately reflects a utility's economic costs. Moving to a nominal model could also have a significant one-off impact on prices as the inflation component of the return on capital is factored into prices rather than being capitalised into the RAB. Utilities could use financial market products to help address their cash flow risks under a real model.

6.2.2 Conducting the financeability test in real or nominal terms

Our proposed financeability test is based on the ratings methodology designed by Moody's for public water utilities.³¹ The test involves calculating 4 key credit ratios for each year of the regulatory period. These credit metrics can be calculated in either real or nominal terms. That is, the data used to calculate the ratios can be either real (taken directly from the building block model) or nominal (converted from real to nominal using forecast inflation).

In the past we have predominantly conducted the financeability test in nominal terms. The advantage of this approach is that it is consistent with Moody's methodology and industry practice. To ensure the financeability test produces the best available estimate of a utility's financeability, we consider it is important to replicate the underlying methodology as closely as possible.

Going forward, we propose to conduct the financeability test using credit ratios calculated from nominal input data.

7 Implementation

We have applied a financeability test based on the preliminary view we stated in our Discussion Paper (2012) to our 2013 metropolitan water pricing decisions. We intend to continue applying this methodology until we finalise this review in early December 2013. We expect that there will be only minor changes between our current and new approach to financeability tests.

In the following sections, we outline the steps we will perform under the financeability test and the reviews where we would apply it.

³¹ Moody's, *Global Regulated Water Utilities: Rating Methodology*, 15 December 2009.

7.1 How we will implement the actual test

We will conduct our financeability test by following the steps outlined below.

- Converting cash flows from our building block model into a set of notional financial statements, including a profit and loss statement, a balance sheet and a cash flow statement.
- Adjusting relevant items in the profit and loss statement, balance sheet and cash flow statement. These adjustments will be based on figures in the latest financial statements of a utility.
- Forecasting the actual interest cost over the upcoming regulatory period.
- Determining a target range for the financial ratios used in the financeability test.
- Calculating the following financial ratios:
 - FFO interest cover: calculated as FFO plus interest expense divided by interest expense
 - debt gearing (regulatory value): calculated as debt divided by regulatory value of fixed assets plus working capital
 - FFO over net debt: calculated as FFO divided by net debt.
- Comparing the results of the financial ratio analysis against the range of benchmark levels and trends over time together with an analysis of the financial statements (based on the building block model and adjusted for forecast actual interest cost).
- ▼ Assessing the financial sustainability of a utility over the upcoming regulatory period.
- ▼ If necessary, determining the root problems of financeability issues and considering remedies.

Figure 7.1 illustrates our proposed financeability test.



Figure 7.1 Proposed financeability framework

7.2 Changes from the 2011 financeability policy

The major changes proposed compared to our 2011 financeability framework are:

- to use the actual interest cost to compute the financial ratios used in our financeability test
- not to provide a notional credit rating
- to assess financial sustainability with reference to a range of benchmark financial ratio levels and trends over time, the former being the level consistent with an investment grade credit rating
- not to expect a utility to meet all the financial ratio benchmark levels in every year of a determination
- to use the results of our financeability analysis as a discussion starter with utilities and their shareholders.

7.3 Reviews to which the financeability test will apply

The financeability test seeks to ensure that an efficient operator can fund provision of the services required (including new investment) having regard to the commercial interest of its owner/shareholders.

In summary we do not propose to apply the financeability test where:

- the prices we regulate do not determine the revenues of the service provider
- the service provider is not established as, or part of, an entity with a distinct capital structure.

Table 7.1 provides a summary of our reviews and our consideration of whether the financeability test should apply.

Industry/reviews	Financeability test applies	Comment
Transport – CityRail, Sydney Ferries, metro buses	No	Our price determinations have a limited impact on total revenue of the utility or service provider.
Transport – taxis, regional buses, and private ferries	No	Industries are regulated under a cost index approach. To apply a financeability test would increase regulatory burden.
Local government	No	Regulated under a cost index approach. Approach already considers financial sustainability.
Water Administration Ministerial Council	No	A department without a commercial capital structure.
Water utilities – Hunter Water, SWC, Sydney Catchment Authority, Sydney Desalination Plant, Gosford City Council, Wyong City Council	Yes	A commercial capital structure exists and our price determinations affect the utility's revenue.
Water utilities – Essential Energy	Yes	A commercial capital structure exists and our price determinations affect the utility's revenue.
Retail energy	Yes, but modified	Need to have regard to the terms of reference, legislation, form of regulation, and characteristics of services. Retail energy suppliers do not have large asset bases, but face significant market volatility.
Section 9 reviews	Yes, subject to terms of reference	

 Table 7.1
 Summary of IPART reviews and financeability test application
Appendices

A Kanangra consultancy report



Report to IPART concerning Credit Ratings

Summary

The purpose of this report is to provide guidance on interpreting quantitative and qualitative factors in a credit rating assessment and recommend a set of benchmark financial ratios that can be used for guidance for credit ratings for NSW water businesses. These benchmarks, although they are financial metrics, take into account the qualitative factors.

Section 1 outlines the definition of credit ratings, as opinions from rating agencies concerning the creditworthiness of entities which issue debt (Issuers) and/or individual issues of debt. Long term credit ratings are generally three to five years look-forward opinions of the creditworthiness.

Section 2 examines the methodology used by both S&P and Moody's in assigning credit ratings, using a combination of qualitative and quantitative factors. S&P has a methodology which is applied to all corporates in which the agency establishes a Business Risk Profile and Financial Risk Profile for each Issuer. The interplay of these two profiles determines the rating.

Moody's has developed industry methodologies which describe how the rating of each corporate within particular industries is rated. Until recently no regulated water companies were rated in Australia, but the Moody's Electric and Gas ("Energy") Network methodology has very similar factors and can be used as a good guide to the way that regulated water companies would be rated.

The analysis of financial ratio benchmarks at different credit ratings of Australia energy networks is addressed in Section 3, Moody's uses the Electric and Gas Networks methodology and the methodology predicts the rating within one notch. The mapping of many of the non-financial (qualitative) factors is largely the same between all the networks. Thus the financial metrics are the only distinguishing factors between individual networks and can be used to predict the credit ratings of networks. In particular the FFO Interest Cover is a good guide to the credit ratings.

Section 4 examines the mapping of Sydney Water Corporation (SWC), and notes that the factor mapping is slightly different to the Energy networks on non-financial factors. However Moody's has determined that on financial metrics, particularly FFO Interest Cover, the two groups exhibit the same range of metrics for the Baa2 rating. This leads to a mapping for water companies using the Energy methodology.

Section 1: Definition of a credit rating

A credit rating is an opinion from a recognised rating agency as to the creditworthiness of an Issuer (a company, a sub-sovereign or sovereign or some other corporate group) or a tranche of debt issued by an Issuer.

As part of its deliberations concerning the financeability of water utilities, IPART is contemplating the likely credit rating of these utilities. However IPART is not including a credit rating as part of the financeability test. A credit rating is assigned by a credit rating agency at a



Rating Committee and includes discussion of both qualitative judgements concerning the Issuer/issue and comparison of quantitative (financial) metrics with other rated entities.

S&P has defined a long term¹ credit rating² as "our opinion of the general creditworthiness of an obligor or the credit risk associated with a particular debt security or other financial obligation".

Moody's has defined credit ratings as "opinions on the relative ability and willingness of an Issuer to make timely payments on specific debt or related obligations over the life of the instrument"

Fitch, the third rating agency, states that ratings are opinions which "are forward looking and includes the analysts' views of future performance". These "opinions are based on established criteria and methodologies. They are not facts, and therefore cannot be described as 'accurate' or 'inaccurate'".

The common elements of long term credit ratings can be summarised as the following:

- They are opinions and can be wrong. The opinions only have value because they are given by organisations which have, for around a century, provided such opinions and these opinions have been in the past have been found to be useful.
- They are opinions of the "creditworthiness" or the willingness and ability of the Issuers to pay the debt obligations in full and on time. A 'default' in terminology of ratings is a delay of a single day in the payment of the debt obligation, as thus does not have same meaning as 'default' in the legal or other sense.
- The opinions are generally assigned to a single tranche or issue of debt. Sometimes a shorthand can be used, and, for instance, an Issuer will be described as a BBB company. The strict interpretation of this is that the senior unsecured debt of the Issuer would be rated as BBB.
- The rating of corporate Issuers are opinions which generally address the financial health of the Issuer for the next three to five years. Rating agencies believe that more than five years in the future cannot be accurately predicted.

There are several aspects of "credit" which are not addressed by credit ratings. Agencies are quick to point out that the following are NOT the attributes of credit ratings:

- They are not facts; they are merely opinions concerning the Issuer and/or its debt. Thus they can be wrong, if for instance, the agency has missed a risk or it has been mislead or other facts have come to light which the agency did not consider;
- Ratings are not recommendation to buy or sell securities; they are merely opinions concerning the relative creditworthiness of securities;
- Ratings do not represent an audit of the Issuer or the debt issue. The agency generally believes the information they are told concerning the future direction of the Issuer, and can change the rating if the forecasts do not come to fruition.
- Ratings are opinions about the credit of the Issuer or issue; they do not address the market for the securities, anything concerning the portfolio risk, or default correlation.

¹ Credit rating which are designated in the scale of AA, BBB, B, CCC and /or Aaa, Baa, Ba, Ca are all long term ratings. Other ratings are short term rating which are seldom referred to.

A table explaining the relation between S&P, Moody's and Fitch ratings is given in Appendix A.



Section 2: Qualitative and quantitative factors in ratings

Both S&P and Moody's undertake their ratings in a similar way, assigning a credit rating after it has been analysed and voted on by the rating committee. However some of the detailed methodology is different.

Section 2A: S&P

S&P has a common methodology for all corporate rating, in which the agency judges the credit of a corporate according to two factors: Business Risk Profile and Financial Risk Profile. These factors are judged independently and the rating is derived by examining the relation between the two profiles.

Business Risk:

Business Risk Profile encompasses the following sub-factors³

- 1. Country Risk
- 2. Industry Factors:
- 3. Competitive Position
- 4. Management Evaluation
- 5. Profitability/Peer Group Comparisons:

Each of these sub-factors is qualitative in nature and thus require judgement as to the characteristics of the Issuer in question. These sub-factors are discussed and agreed at the Rating Committee meeting which determines the credit rating.

These Business Risks are generally summarised in the Business Risk Profile, which can be ranked for each Issuer as either Excellent (being the lowest risk) through Strong, Satisfactory, Fair, Weak to Vulnerable (the highest business risk). Mostly, but not always, S&P states the exact Business Risk Profile they have decided upon in their written opinions of individual companies.

Financial Risk:

Financial risk encompasses the following sub-factors:

- 1. Financial Policy/Governance/Risk Tolerance
- 2. Accounting characteristics and information risk
- 3. Cash Flow Adequacy
- 4. Capital Structure and Asset Protection
- 5. Liquidity/Short term Factors

Most of these Financial Risk sub-factors are expressed as financial metrics.

These Financial Risks are summarised in a Financial Risk Profile which could be from Minimal (the lowest financial risk), through Modest, Intermediate, Significant and Aggressive to Highly Leveraged (the most financial risk).

³ The most recent exposition of Business Risk and Financial Risk profile is S&P's publication "Corporate Rating Criteria, 2008"



The interplay⁴ between the Business Risk Profile and Financial Risk Profile will determine the rating. Lower ratings will result from issuers with more significant Business Risk Profiles than those which exhibit lesser Business Risk Profiles. Likewise issuers with high financial risk will be rated lower than those with lower financial risk. Thus two issuers with similar Business Risk Profiles could be rated differently if their Financial Risk Profiles are different.

The interaction between Business Risk Profile and Financial Risk Profile is shown in the table below:

Financial -> Business V	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA/AA+	AA	А	A-	BBB	-
Strong	AA	А	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	-	BBB-	BB+	BB	BB-	В
Weak	-	-	BB	BB-	B+	B-
Vulnerable	-	-	-	B+	В	B- or lower

S&P Matrix of Business Risk Profile and Financial Risk Profile

Section 2B: Moody's

Moody's has taken a different approach to S&P and has published a series of industry methodologies which outlines the ratings drivers for each industry. Each methodology lists the factors which are important to the rating for companies in that industry, the characteristics of each factor at each rating level and the weighting of each factor in determining the rating. Individual factors would fit into the Business and Financial Risk Profile categories of S&P and each methodology has about 50% business and 50% financial factors.

There are two relevant methodologies for the regulated Australian water companies:

- Global Regulated Water Utilities December 2009: When the methodology was written there were 26 water utilities rated using the methodology, of which 15 were in the UK, 6 in the US and the other 5 five in Europe, Latin America and Asia. There was no water utilities rated in Australia. However in late February 2013 the rating of Sydney Water Corporation was published and the rating used this methodology.
- Regulated Electric and Gas Networks August 2009: When this methodology was published it was used to rate 53 networks globally, 11 of which were in Australia.

Both these methodologies have very similar rating factors and similar attributes for each factor. The table in Appendix B shows the factors and the weighting of each factor in arriving at the rating for both water and energy networks.

Each of the sub-factors in Appendix B has a range of mapping characteristics (from Aaa, Aa, A Baa, Ba and B) which reflects the attributes of a company rated in that band.

The sub-factor descriptions are almost identical for both methodologies, but the financial metrics (sub-factors 4(a) - 4(d), see Table in Appendix B) have slightly different ranges for each industry, as exemplified in the table below:

⁴ See "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded" S&P, 27 May 2009



Rating Range	Sub-Factor 4(a): FFO Interest Cover – Water Utilities	Sub-Factor 4(a): FFO Interest Cover – Electric and Gas Networks
Aaa	>10.0x	>7.0x
Aa	7.0-10.0x	5.0x - 7.0x
А	4.5x - 7.0x	3.5x - 5.0x
Baa	2.5x - 4.5x	2.5x - 3.5x
Ba	1.8x - 2.5x	1.5x - 2.5x
В	1.5x - 1.8x	<1.5x

Comparison of FFO Interest Cover - water versus electric and gas networks

Were a water utility and an electric network to both have FFO Interest Cover of (say) 6.0x then the water utility would map to an A whereas the network would map to an Aa. However if the metric was 2.0x for both then both would map to Ba.

Each of the agencies is keen to stress that the methodologies used by them is only a guide to the rating and that the rating committee within each agency makes the final decision concerning assigning a rating. However, Moody's has stated that around 80% of final rating should within one notch of the rating as calculated from the mapping within the methodology.

Section 3: Mapping of Australian Electric and Gas Networks to the methodology

The table below shows that the actual rating is within one notch of the rating calculated from the methodology mapping for Australian energy networks.

Issuer	Date of Publication	Business/State	Mapped Rating	Actual Rating	Difference between Mapped and Actual ratings
ETSA Utilities	9/2012	Electricity/SA	Baa1	A3	+1
United Energy Distribution	5/2012	Electricity/Vic.	Baa3	Baa2	+1
Powercor	8/2012	Electricity/Vic.	A3	A3	0
ElectraNet	4/2012	Electricity/SA	A3	Baa1	-1
ATCO Gas Australia	12/2012	Gas/WA	Baa1	Baa2	-1
Envestra	5/2012	Gas/SA,Vic,Qld	Baa2	Baa2	0
Energy Partnership (Gas)	5/2012	Gas/Vic.	Baa3	Baa3	0

Relationship between the mapped and actual rating - Moody's

Moody's publishes the mapping for each sub-factor for each issuer and so the actual rating drivers can be directly compared. As the weighting of each sub-factor is outlined in the methodology, it can be seen that 60% of the rating is dictated by qualitative (non-financial) factors (factor 1, 2 and 3, in Appendix B) and that 40% is driven by financial metrics.

It can be seen that the sub-factors are a mix of qualitative and quantitative factors. In general both the energy networks rate very highly on the qualitative factors and rather weaker on the quantitative factors, as shown in the following table:

Factor	SA Electric Networks	Powercor	ElectraNet	Envestra	United Energy Distribution	ATCO Gas	Energy Partnership (Gas)
Overall Rating	A3	A3	Baa1	Baa2	Baa2	Baa2	Baa3
Qualitative Rating	Aa3	Aa3	Aa3	Aa3	A1	Aa3	Aa3
Quantitative Rating	Baa3	Ba1	Baa3	Ba2	Ba3	Baa3	Ba3

Moody's rating for energy networks and the contribution of qualitative and quantitative factors

In addition, sub-factors representing 42.7% of the energy networks rating are the same for all energy network issuers. The remaining qualitative sub-factors show very little variation between issuers and thus the differentiating factors become the financial metrics.

In addition to the methodology Moody's provides guidance in its publications for the expectation for financial metrics at the current rating level and the triggers for upgrade and downgrade. In these opinions Moody's provides limits for ratings for FFO Interest Cover and Debt/RAB and occasionally FFO/Debt for the current rating. This can be confusing as the ranges do not necessarily match the sub-factor guidance given in the methodology. From an analysis of the publications (which is listed in full in Appendix C) it can be derived that the energy networks can be distinguished by using financial metrics, particularly FFO Interest Cover as follows:

Summarised financial metric limits for Energy Networks from Moody's

	A3	Baa1	Baa2	Baa3	Ba1
FFO/Interest	>2.9	2.3-2.9	1.8-	1.4/-1.8	<1.4
			2.3/2.5		
Debt/RAB	<60%	80-85%	60%-91%	90%->100%	>100%
FFO/Debt	>10%	<12%	<6%-10%	5-8%	<4%

Section 4: Mapping Sydney Water to the electricity and gas methodology and to the water methodology

The recent publication of the rating of Sydney Water Corporation (SWC) uses the Moody's water utilities methodology. The mapped rating is Baa2 and the stand alone rating is also Baa2⁵.

The sub-factors map to similar levels as the Australian energy networks, with a couple of notable exceptions:

Factor Number	Broad Rating Factors	Rating Sub-Factor	Sub-Factor Rating (Sydney Water)	Sub-Factor Rating (Electric and Gas Networks)
1(a)	Regulatory Environment and Asset Ownership Model	Stability and Predictability of Regulatory Regime	А	Aaa
1(b)		Asset Ownership Model	Aa	Aa
1(c)		Cost and Investment Recovery	А	А
1(d)		Revenue Risk	А	Aa-A
2(a)	Efficiency and Execution Risk	Operational Efficiency (called Cost Efficiency in E&G)	Baa	Aaa-Aa

⁵ The published rating is actually A1, which is a four notch upgrade from the stand alone rating of Baa2, due to the ownership of SWC by the State of NSW (Aaa) and the importance of SWC to the State.

2(b)		Scale and Complexity of Capital	А	Aa-Ba
		Programme		
3(a)	Stability of Business Model and Financial Structure	Ability and Willingness to Pursue Opportunistic Corporate Activity	Aa	А
3(b)		Ability and Willingness to Increase Leverage	Aa	A-Baa
3(c)		Targeted Proportion of Operating Profit Outside Core Regulated Activities	Aa	А
4(a)	Key Credit Metrics	Adjusted ICR (or FFO Interest Cover)	Ba	Baa-Ba
4(b)		Net Debt/RAV (or Fixed Assets)	Baa	Baa-B
4(c)		FFO/Net Debt	Ba	A-Ba
4(d)		RCF/Capex	В	Ba-B

Sub-Factor 1(a): Stability and Predictability of Regulatory Regime: Whereas all the energy networks map to Aaa on this sub-factor SWC maps to A. The difference is that in SWC's case the regulatory framework is "generally supportive of SWC's credit profile⁶" due to high transparency and consistent approach to revenue determination. This is in contrast to the energy networks which uniformly display Aaa characteristics related to the length of the regulation (some around 20 years).

Sub-factor 2(a): Operational Efficiency: SWC maps to Baa ("performance in line with national average") whereas the energy networks are rated Aaa or Aa on this factor as they are generally regarded as performing better.

Sub-Factors 3(a), (b) and (c): Energy networks map to a range of A to Baa on this sub-factor due their ability to conduct other works outside their regulated activities and can borrow externally. SWC however borrows through NSW TCorp and thus is more restricted. Accordingly it rates Aa on all these sub-factors.

Moody's opinion states that it expects that the FFO Interest Cover for the rating of SWC at Baa2 should be around 1.8x for the next three years and that the rating would change were the metric to go above 2.5x or less than 1.7x. This range is almost exactly the same range as Baa2 for energy networks. Thus despite the fact that the non financial factors map to slightly different ratings, the financial metrics are the same for SWC as for other energy networks.

In its opinion Moody's also compares SWC with Envestra and United Energy Distribution (UED), both of which are rated Baa2, stating that SWC has "somewhat weaker interest coverage".

In the most recent Envestra opinion⁷ Moody's expects that Envestra metrics to improve over the next three years, increasing to above 2.5x, FFO/Debt to over 10% and Debt/RAB towards mid 70%. The triggers for upgrade and downgrade for Envestra are FFO/Interest of 2.3x to 2.5x and Debt/RAB of 80%-85% on the upside and FFO/Interest of 1.7x and Debt/RAB of above 90% on the downside. These are almost identical with those for SWC.

In the May 2013 opinion on the rating of UED, Moody's expected that FFO/Interest Cover would be above 2.0 and Debt/RAB around 91% for the next three years. The triggers for rating

⁶ Quotes in this section are from Moody's published opinion

⁷ 17 April 2013



movements as stated as FFO/Interest of greater than 2.3-2.5x and Debt/RAB around 80%-85% for an upgrade and FFO/Interest of below 1.8x and Debt/RAB of above 100% on the downside.

In conclusion, it can be seen that the triggers for movements in the rating of SWC are very similar to the triggers for changes in the ratings of electric networks.

Thus by combining the opinions published by Moody's with the table of rating ranges on page 6 above the following table can be established for water utilities (provided that the water utilities have a similar regulatory framework as SWC):

	A3	Baa1	Baa2	Baa3	Ba1
FFO/Interest	>2.9	2.3x-2.9x	1.7x-2.5x	1.4/1.5x- 1.7x	<1.4/1.5
Debt/RAB	<60%	80-85%	60%-	90%->100%	>100%
			91%%		
FFO/Debt	>12%	>10%	<6-10%	5-8%	<4%



Moody's	S&P	Fitch	
Aaa	AAA	AAA	
Aa1	AA+	AA+	-
Aa2	AA	AA	-
Aa3	AA-	AA-	-
A1	A+	A+	
A2	А	А	
A3	A-	A-	
Baa1	BBB+	BBB+	-
Baa2	BBB	BBB	-
Baa3	BBB-	BBB-	Investment Grade
Ba1	BB+	BB+	Non-Investment Grade
Ba2	BB	BB	
Ba3	BB-	BB-	1
B1	B+	B+	1
B2	В	В	1
В3	B-	B-	1
Caa1 etc.	CCC etc	CCC etc	1

Appendix A: Comparison of Rating Scales for Moody's, S&P and Fitch

Appendix B: Moody's factors in rating regulated water utilities and electric and gas networks

Factor Number	Broad Rating Factors	Rating Sub-Factor	Sub-Factor Weight (Water Methodology)	Sub-Factor Weight (Electric and Gas Methodology)
1(a)	Regulatory Environment and Asset Ownership Model	Stability and Predictability of Regulatory Regime	15%	15%
1(b)		Asset Ownership Model	10%	10%
1(c)		Cost and Investment Recovery	12%	10%
1(d)		Revenue Risk	3%	5%
2(a)	Efficiency and Execution Risk	Operational Efficiency (called Cost Efficiency in E&G)	5%	6%
2(b)		Scale and Complexity of Capital Programme	5%	4%
3(a)	Stability of Business Model and Financial Structure	Ability and Willingness to Pursue Opportunistic Corporate Activity	3.33%	3.33%
3(b)		Ability and Willingness to Increase Leverage	3.33%	3.33%
3(c)		Targeted Proportion of Operating Profit Outside Core Regulated Activities	3.33%	3.33%
4(a)	Key Credit Metrics	Adjusted ICR (or FFO Interest Cover)	15%	15%



4(b)	Net Debt/RAV (or Fixed Assets)	15%	15%
4(c)	FFO/Net Debt	5%	5%
4(d)	RCF/Capex	5%	5%
		100%	100%

E&G = Electric and Gas Network Methodology

Appendix C: The relationship between Credit Ratings and Financial Metrics for Networks, from various Moody's publications

Company	Rating	FFO/Interest	Debt/RAB	FFO/Debt
	(movement)			
ElectraNet	To be	2.9-3.0	<60%	>10%
(3/13)	upgraded to			
	A3			
United Energy	Up to Baa1	At least 2.3-	80-85%	
(5/13)		2.5x		
Envestra	Up to Baa1	2.3-2.5x	80-85%	
(Consolidated)				
(4/13)				
ATCO Gas	Up to Baa1	2.7-2.8x		12-15%
(12/12)				
ElectraNet	To be	< 2.3	>75%	<6%
(3/13)	downgraded			
	to Baa2			
United Energy	Baa2 (current	>2.0x	~91%	
(5/13)	metrics)			
Envestra	Baa2, Stable	>2.5x	Mid 70%	>10%
(Consolidated)	(current			
(4/13)	metrics)			
ATCO Gas	Baa2 (current	~2.5x	60%-70%	11-12%
(12/12)	metrics)			
DBNPG (5/13)	Up to Baa2	1.8-1.9x		8%-10%
Energy Part.	Up to Baa2	>=1.8x	<85%	
(Gas)				
(5/13)				
ATCO Gas	Down to Baa3	<1.8x	>90%	<8%
(12/12)				
United Energy	Down to Baa3	<1.8x	>100%	
(5/13)				
DBNGP (5/13)	Baa3 (current	~1.7x		5-6 %
	metrics)			
Envestra	Down to Baa3	<1.7x	>90%	
(Consolidated)				
(4/13)				
DBNGP (5/13)	Down to Ba1	<1.4x		<4%
Energy Part.	Down to Ba1	<1.4x	>100%	



(Gas) (5/13)		

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FINANCEABILITY RATIOS IN REGULATORY AND STATUTORY ACCOUNTS INDEPENDENT PRICING AND REGULATORY TRIBUNAL OF NSW (IPART)

23rd July 2013

Final Report

ORIGINAL

Submitted by:

Cambridge Economic Policy Associates Ltd



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1. INTRODUCTION

1.1. Overview

In this report CEPA provides advice to the Independent Pricing and Regulatory Tribunal of NSW (IPART) on the impact of calculating financial ratios using regulatory and statutory approaches and begins a discussion on the implications of these differences. As requested by IPART, as well as considering the impact of moving between actual and notional values the difference between regulatory and statutory approaches are considered through a range of scenarios, including for business-as-usual, rapid growth in the asset base and a start-up company. In particular, IPART has asked CEPA to examine four financeability ratios in the regulatory and statutory settings as set out in Figure 1.1.





In our report, we first consider the differences between the regulatory and statutory approaches e.g. statutory accounts often use historic cost accounting to record the value of fixed assets while the equivalent regulatory asset base (RAB) is indexed. We then examine what factors are most important in accounting for the differences in the two approaches. After making adjustments to

IPART's existing model to account for these differences and extending the model to reflect the three scenarios over a number of regulatory periods, we consider what impact they have on the financial ratios set out above. We then draw on this analysis to provide advice on what these differences might mean for IPART's approach to financeability going forward.

The impetus for this report has arisen in part from the regulator's decision to conduct the building block approach on the basis of notional values (for example, for gearing and the cost of debt) but then to conduct a financeability cross-check using actual gearing and interest costs. The results indicate that while companies are likely to be financeable when notional assumptions in line with the building block model are applied, meeting financeability tests is more challenging when actual numbers are used. While this does not suggest a problem in the application of the building block model, it may suggest that some further thinking is needed about the interpretation of financeability tests when actual numbers are applied and in particular about:

- the implications for the behaviour of regulated companies; and
- the appropriate thresholds for financial ratios when using actual versus notional numbers.

1.2. IPART's approach to financeability

Examination of financial ratios forms part of the financeability test carried out by regulators to double check the outputs of a regulatory price determination. IPART describes the financeability test as helping to:

"assess the impact of IPART's price determinations on the ability of a utility to:

- fund the provision of services;
- service and repay debt; and
- access debt markets for new borrowing requirements."

The overall objective of the financeability test is to assess the financial sustainability of the utility being examined.

Until recently, IPART operated its financeability test using a ratings model provided by NSW Treasury. However, this model is no longer available and IPART has had to revise its approach. IPART has proposed a new financeability test as set out in Box 1.1. This new approach is based on the financeability test applied in the 2012 Sydney Water and Sydney Catchment Authority price reviews.

¹ IPART (2012) "Financeability test in price regulation", at p.1, accessed at <u>http://www.ipart.nsw.gov.au/Home/Industries/Research/Reviews/Financeability_Tests/Financeability_test_in_price_regulation - 2012</u>

Box 1.1: IPART's proposed financeability test

IPART's proposed financeability test involves the following elements:

- a projection of actual interest cost, rather than notional interest cost, to compute the financial ratios for the financeability test;
- no notional credit rating;
- a range of benchmark financial ratio levels and trends over time as an initial filter to identify financeability concerns;
- no expectation that a utility meet all the financial ratio benchmark levels in every year of a determination;
- where financial ratios suggest an issue, this is supplemented by further analysis of the utility's cash flows and balance sheet; and
- if a financeability adjustment is required, using a transparent, temporary, reversible adjustment.

Source: IPART²

One interpretation of this new proposed financeability test is that it will rely less on the notional values that form part of the regulatory building block approach and more on actual values, like interest paid, that are found in the statutory accounts. As a result, regulatory companies have raised a question about whether the financeability ratios would be met if a purely notional capital structure and cost of debt is applied rather than actual numbers.³ In this report, we present the two cases – regulatory and statutory – across the three different scenarios.

1.3. Key differences in financeability test results

In the analysis which follows, we have set up the regulatory case on a notional basis and then have applied the resulting capex, opex, revenue and net debt to the statutory model. The differences in our ratios are an outcome of the different accounting practices that are used in the regulatory approach as compared to the statutory approach. In particular, under the regulatory approach the RAB is indexed over time whilst statutory accounting practices generally include fixed assets at their historical accounting cost.⁴ The difference in the treatment of the RAB/fixed assets feeds through to other elements of the statutory and regulatory accounts, such as the value of depreciation and tax.

Another key difference between the statutory and regulatory approaches is the interest rate used. Under the regulatory approach an indexed RAB is used with a real cost of capital (effectively a real interest rate). By comparison, under the statutory approach the RAB is not indexed but a nominal interest rate is applied. This should produce the same net present value (NPV) of cashflows over the life of the asset but with different profiles. Applying a real WACC to an indexed RAB produces a lower initial cash-flow than applying a nominal WACC to an un-indexed RAB. This has often been cited as one of the causes of financeability problems as regulation tends to

² IPART (2012) "Financeability test in price regulation", at p.2, accessed at <u>http://www.ipart.nsw.gov.au/Home/Industries/Research/Reviews/Financeability Tests/Financeability test in price regulation - 2012</u>

³ It is our understanding that in the case of the regulated state owned corporations in NSW the notional level of gearing is usually higher than the actual level of gearing.

⁴ We are aware that this takes the most extreme case of the differences between the regulatory and statutory accounts in Australia as Australian accounting standards require regular revaluation of system assets in line with 'fair value' principles.

base revenue determinations on the former approach while companies borrow on the latter basis. 5

1.4. Preliminary results

Our results indicate that there are substantial differences in the ratios for the regulatory and statutory cases. In general, under the business-as-usual scenario, the regulatory ratios indicate a more financeable business than do their statutory counterparts. This indicates that it can be important for the regulator to conduct financeability tests using a regulated company's actual numbers even where financeability is indicated using the regulatory accounts.⁶

However, it should be noted that a divergence between the financeability test results for the regulatory and statutory cases is not an indication that there is a problem with the application of the building block model itself.⁷ Rather it may indicate, for example, that the thresholds for the financial ratios need further consideration to ensure they are appropriate or that the utilities themselves may need to take steps such as indexing their debt to reduce the potential for financeability issues.

⁵ Although there are ways to overcome these issues such as by companies borrowing index-linked debt which mimics the regulatory determination.

⁶ In our model, the regulatory financeability test involves a notional level of gearing and notional cost of debt. The results under IPART's current approach to financeability will differ to this as they are dependent on the actual financial decisions of the regulated company and how much this is different from the notional levels (i.e. an approximation of the actual gearing and interest payments are applied by IPART in the financeability test).

⁷ Note that an analysis of the application of the building block model is outside the scope of this report.

2. DIFFERENCES IN STATUTORY AND REGULATORY ACCOUNTING

2.1. What elements of the ratios need further investigation?

In this section of the report we look at the four financial ratios that have been suggested for the new financeability test and their calculation in the existing IPART building block model. The purpose of this examination is to identify the elements of the ratios that may differ across the statutory and regulatory accounts. Once these have been identified the nature of the divergence can be analysed in more detail and this determines the key features that should be modelled to describe the differences between financeability ratios that emerge in the statutory and regulatory approaches.

Details on the ratios, their purpose and definition and the key features that may differ are outlined in Table 2.1.

Ratio	Purpose	Definition in IPART's model	Key features for investigation
Funds from operations (FFO) interest cover	To measure a firm's ability to pay interest	(FFO + net interest expense)/net interest expense	DepreciationTaxInterest rate
FFO over net debt	To measure a firm's ability to pay its debts using operating income alone	FFO/(Debt – cash assets)	TaxDividends
Debt gearing (regulatory value)	To measure the proportion of a firm's debt to its equity	(Debt – cash assets)/(Regulatory value of fixed assets + working capital)	 Value of the regulatory asset base (RAB) Depreciation Tax
Retained cash flow to capex	To measure the firm's ability to cover debt after investment in capital	(FFO – dividends paid)/capex	TaxDepreciationDividends

Table 2.1: Financial ratios and key components

In the following section, we examine how the value of the RAB, interest rates, depreciation, tax and dividends may differ between statutory and regulatory accounts.

2.2. What are the differences between statutory and regulatory accounting practices?

IPART's discussion paper on the applicability of the financeability test indicated that it would be used for water companies, with the principles also applying for electricity and gas retail businesses. In the detail that follows, we therefore focus on Sydney Water as a representative of the water and sewerage companies that are regulated by IPART. To determine the differences between the statutory and regulatory approaches we have examined Australian Accounting Standards; the statutory accounts of Sydney Water Corporation; and IPART's most recent determination for Sydney Water. The key differences are outlined in Table 2.2.

Table 2.2: Comparison of statutory and regulatory approaches

Element	Statutory approach	Regulatory approach	Implications for modelling
RAB/ Fixed Assets	 Property, plant and equipment are initially recognised at the cost of acquisition (historical cost accounting) Plant and equipment are not revalued following initial recognition 	 IPART uses a RAB approach The opening value for a new determination is calculated as the opening value from the previous determination plus prudent capex and minus depreciation. 	• Indexation – in the most extreme case the statutory model will not have indexation or revaluation of the RAB, rather the historical accounting cost will remain as the value of the fixed assets.
	• System assets are revalued using the fair value approach. This is the depreciated current replacement cost of the asset based on the modern engineering equivalent replacement assets (MEERA)	 This RAB is rolled forward by adding forecast capex, then deducting depreciation and disposal of assets The value is indexed for inflation 	
Interest rate	• The nominal rate of interest is applied	• A real interest rate (based on the cost of capital) is applied	• Different interest rates are applied in each case and this leads to different cash-flow profiles
Depreciation	• Depreciated on a straight-line basis over the estimated useful life	• Depreciated on a straight line basis using the assets lives put forward by the water company	• Differences will arise from the different asset base
Tax	 State owned corporations are subject to notional taxation, payable to the NSW Government 30% rate of tax is applied to taxable income Taxable income is revenue (including non-regulated revenue) minus expenses 	 30% statutory corporate tax rate is applied IPART deducts operating cost allowance, tax depreciation and interest expense from the revenue requirement to calculate taxable income Interest expense was calculated on borrowings equal to notional gearing (60%) times RAB and a nominal interest rate was applied 	• Differences will arise from the different asset base
Dividends	• NSW Treasury Financial Distribution Policy for Government Businesses suggests a dividend payout ratio of 70%	• IPART applied a payout ratio of 70% for Sydney Water	No implication

2.3. Discussion on modelling the differences

Table 2.2 illustrates that the key difference between the two approaches is the valuation of the RAB versus fixed assets. The inflation adjustment to the RAB affects:

- RAB value and consequently the value of equity;
- Depreciation (driven by the change in RAB value);
- Profit and tax (driven by depreciation and interest payments); and
- Ratios (driven by all the above factors)

We consider this in some detail. In the following discussion 'R' refers to the regulatory approach and 'S' refers to the statutory approach.

The basic RAB definition for regulatory accounts can be set out as:

$$RRAB_{t} = (RRAB_{t-1} \times (1 + \Delta CPI_{t-1})) + Inv_{t} - RDepn_{t} - Disposals_{t}$$

Consequently the inflation adjustment (based around the measurement of CPI) affects the RAB and investment as it gets incorporated into the RAB.

Since the RAB is assumed to be funded by debt and equity the following must be true:

$RRAB_t = RNet \ Debt_t + REquity_t$

The relationship between RNet Debt and SNet Debt should be simple – the latter is the unindexed value of the RNet Debt. This then leaves a similar relationship with equity. However, the interest paid in the statutory accounts needs to be the nominal cost of debt. Consequently, the actual notional interest paid may be greater than the notional regulatory interest paid (especially in the early years of the start-up scenario). This is shown in the equations below.

RInterest = RNet Debt × Real Cost of Debt SInterest = SNet Debt × Nominal Cost of Debt

Equity can be viewed as a residual.

Regulatory depreciation is driven by the regulatory RAB. Effectively regulatory depreciation is calculated as:

$RDepn_t = \frac{RRAB_t}{Average\ remaining\ asset\ life}$

Again, the only element of this which is fixed between regulatory and statutory accounts is the average remaining asset life – consequently, if statutory RAB is smaller than regulatory then the depreciation charge will be smaller.

Combining the various influences will help illustrate the impact of moving between regulated and statutory accounts.

The following example of a start-up investment (100 per year for five years, then a more long-term level of investment) helps illustrate the points.

2.3.1. Example

First, consider the difference in return (interest and depreciation). The first diagram shows the statutory interest and depreciation charges minus the regulated ones. As can be seen, for the first years the statutory interest and depreciation charge is higher – this is owing to the nominal interest charge being greater than the regulated one and the higher regulatory depreciation charge being insufficient to counter-balance that.



The next diagram shows this difference as a percentage of the regulatory allowance for interest and depreciation so that the scale of the impact can be assessed.



As can be seen, the difference in this start-up example is significant.

These differences need to also be considered with respect to the size of the RAB. Inflation adjustment of the opening RAB means that RRAB will always be equal to or greater than SRAB. This is shown in the next diagram where the difference between SRAB and RRAB is always negative – implying that RRAB is always bigger than SRAB.



The next diagram shows this difference as a percentage of the RRAB. In this example the difference increases over time but never exceeds 10% of the RRAB.



If these effects are combined, what happens to the statutory pre-tax equity returns? Assume that the allowed return is set using the regulatory model, then the statutory equity return is the residual once the statutory interest and depreciation charges have been met. This is shown in the following figure. As can be seen, the allowed regulatory equity return is greater than the statutory return. This changes over time – as the line in the diagram, which is statutory return on equity return minus the allowed regulatory equity return, moves from being negative to positive.



The returns can be shown as percentages of the average RAB – as is shown in the following diagram. What can be seen is that the smaller statutory equity return is more than compensated for by the smaller equity RAB (especially when the fixed nature of the regulatory net debt is taken into account). This is a result of assuming that the notional level of Net Debt is determined at the regulatory level and is then fixed, irrespective of whether one is considering regulatory or statutory accounts.



As noted, this is in part explained by the net debt being set at the regulatory level. In the example, regulatory gearing is set at 50%. The next diagram shows that statutory gearing is always higher than this – although not significantly.



2.3.2. Implications for differences between statutory and regulatory approaches

This example shows that the move from regulatory to statutory accounts for this start-up scenario means:

- the statutory interest and depreciation charge is greater than the regulatory charge in the initial years;
- S RAB is smaller than R RAB;
- S Gearing is higher than R Gearing; and
- taxes would be higher in the initial years of the regulatory accounts compared to the statutory (if the tax was measured on the basis of the accounts under consideration).

From a financeability perspective this means:

- statutory interest cover will be lower than regulatory interest cover; and
- statutory gearing is always higher than regulatory.

This should lead to a worse financeability position if measured on the basis of statutory accounts rather than regulatory.

2.3.3. Implications for financial ratios

Table 2.1 below sets out the likely impact on each of the four key financeability ratios. The rationale for this impact is shown in Annex 1.

Ratio	Impact	Comment
FFO Interest Cover	Lower	Driven by increased tax and higher net interest payments
FFO over net debt	Lower	Driven by increased tax and possibly higher net debt
Debt gearing	Higher	Driven by possibly higher net debt and a lower RAB
Retained cash-flow to capex	Lower	Driven by increased tax

Table 2.1: Likely impact on ratios of moving from regulatory to statutory accounting

2.4. Financeability issues for regulated companies in NSW

Given that IPART's proposed financeability approach will mostly apply to regulated water companies, we focus in this section on some of the issues that have been raised by those companies in relation to financeability. Particular issues relate to:

- The setting of interest rates; and
- Depreciation and the value of the RAB.

2.4.1. Interest rates

Sydney Water was concerned that the cost of debt proposed by IPART was lower than the likely future debt costs for the company. In addition, there was a concern that the rate may not recognise that companies are bound by fixed interest rates on long-term debt that may have been acquired in previous regulatory periods.

The potential for these kind of issues to arise has been been recognised in IPART's latest approach which makes use of both current market data and long-term averages. More specifically, IPART's Interim Report on WACC methodology suggests the following approach:

- Estimate a WACC range based on current market data;
- Estimate a WACC range based on long-term averages; and
- Establish a WACC range using the midpoints of the two WACC ranges and choose a point estimate at the midpoint of that range.⁸

2.4.2. Depreciation and the RAB

During the last price control for Sydney Water Corporation, the company claimed that the level of allowed depreciation was well below the amount it required to renew its assets. This was seen as being a direct consequence of the RAB being set at a lower level than the company-estimated replacement cost of assets i.e. the RAB was set in 2000 at around \$13 billion whilst Sydney Water estimated that the replacement cost of its assets at that time was around \$30 billion.⁹ Sydney

⁸ See IPART (2013) "WACC methodology", accessed at http://www.ipart.nsw.gov.au/Home/Industries/Research/Reviews/WACC/Review of method for determining the WACC/17 Jun 2013 - Interim Report/WACC Methodology - Interim Report

⁹ Sydney Water (2011) "Sydney Water submission to IPART's Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services", accessed at http://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews All/Metro Pricing/Review of prices for Sydne

Water therefore raised concerns about a continued deterioration in its balance sheet, describing the situation as involving statutory depreciation expenses that were trending down following downward revaluations of the statutory asset base and borrowing costs that were increasing due to additional debt required to finance increased capital expenditure.

This issue has been raised previously by Sydney Water and by the Auditor-General in reports to the NSW Parliament. In particular, during the 2008 price determination, IPART reported that the Auditor-General was concerned about Sydney Water's ability to fund the replacement of its system assets due to the difference between Sydney Water's replacement asset values and the values derived from the assets' recoverable amounts.

IPART has noted that as part of its 2000 determination of Sydney Water prices a "line-in-the sand" approach was taken to asset valuation which distinguished between past and new investments. IPART chose the 1998/99 year as the base year for calculations as it was considered to be a 'normal' year without any extraordinary items that would distort the valuation The opening asset value for existing assets was established based on the net present value of future cash flows at price levels current at that time. After the initial line-in-the-sand calculation, IPART 'rolled forward' each previous year's RAB value to establish the opening RAB value for the next year.

As part of the application of the MEERA methodology, Sydney Water includes the value of both cash and non-cash capital contributions in its estimate of the asset base value. However, IPART excludes from the RAB any assets that have been donated to Sydney Water by land developers or have been funded by developers through cash contributions. IPART believes that including these amounts would lead to customers being charged a rate of return on assets which had already been paid for (including a profit component) by new entrants to the system. However, IPART accepts that when the water utility eventually replaces these externally funded assets at (at their own expense), then the cost should be included in the service provision costs.

IPART's line-in-the-sand approach was adopted because IPART was concerned about the potential price effects arising from past decisions on asset construction that may not have been made for strictly economic reasons. However, over time IPART's RAB values have steadily increased while Sydney Water's recoverable amounts have been variable with an overall decrease. At the same time, Sydney Water's replacement values have accelerated much more rapidly than either the RAB or the recoverable amount values.¹⁰

The issue of the statutory asset value being higher than the RAB is examined further in our financial model where we include a section on the financial ratios that result in this scenario.

<u>y Water Corporations water sewerage stormwater/24 Jun 2011 - Release of Issues paper/Issues Paper -</u> <u>Review of prices for Sydney Water Corporations water sewerage stormwater and other services -</u> <u>June 2011</u>, at p.10

¹⁰ See IPART (2008) "Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services", at pp.209-216

2.5. Approaches to dealing with issues of financeability

Where financeability tests indicate the potential for financeability issues in a regulatory period, there are a number of options open to regulators to deal with the issue. These can be separated into:

- Market mechanisms; and
- Regulatory options.

2.5.1. Market mechanisms

The following discussion is drawn from a discussion paper on financing networks put together for Ofwat and Ofgem in 2006.¹¹

Equity injection

One approach to lowering a high level of gearing is to assume that the regulated company will be able to step in and raise new equity (e.g. through a rights issues or an injection of cash). An equity injection has the benefit of reducing gearing and increasing interest coverage and through this relieving financeability problems. However, a company's ability to inject equity in order to stabilise gearing is limited by the appetite of the market for new equity. For the regulator this may mean that it needs to consider whether the regulated cost of equity is sufficient to sustain the injection of new equity.

Retained earnings

If a company is not fully distributing its allowed equity return through dividends, then the absolute level of shareholders' equity in the regulatory asset value will be growing. This reduces the need for debt finance and can therefore reduce financeability constraints. Both Ofwat and Ofgem have assumed dividend yields less than the allowed cost of equity in financeability modelling in previous price reviews which implies that some profit attributable to shareholders is being retained.

2.5.2. Regulatory options

Regulatory commitment and investor confidence

By reducing uncertainty about future cash flow the regulator may be able to increase investor confidence and this can result in credit rating agencies and investors being more relaxed about short-term pressure on ratios. In this case, the pressure to constrain dividends may be reduced because credit ratings could be maintained at lower ratio thresholds. Reducing uncertainty can also be beneficial for issuing rights and can facilitate the adoption of more flexible dividend policies.

¹¹ Ofwat and Ofgem (2006) "Financing Networks: A discussion paper", accessed at <u>http://www.ofgem.gov.uk/Networks/Policy/Documents1/12890-FinancingNetworks080206.pdf</u>

Taking a more flexible approach to the interpretation of key financial ratios

This is an approach that has been suggested by IPART in its recent discussion paper. Ofwat and Ofgem use a package of financial indicators when assessing financeability. These are based on indicators that are commonly used by market analysts, including credit rating agencies, and are benchmarked so that financial projections of the company are consistent with an investment grade credit rating.

In these circumstances it is the overall trend of the package of indicators, rather than the level of any particular indicator, that is most important. Under this approach there is also a reliance on a group of indicators rather than just one indicator. Most analysts use a group of ratios with different weightings being applied to each one.

Revenue uplift

This approach was adopted by Ofwat in 1999 and 2004 for the water industry and involves increasing price control revenue to limit or remove pressure on key financial ratios. A criticism of the revenue uplift approach is that it raises issues of intergenerational equity and it may not be value neutral. This is because companies have not been required to pay back the additional revenues when the cash flow position improves (i.e. the revenues above the cost of capital that have been allowed for in consumers' bills). Requiring companies to pay back their revenue can be difficult because there is no guarantee that these payments will be affordable in the future and this can lead to increased uncertainty and perceptions of risk. However, there are ways for a revenue uplift to be done in a way that is revenue neutral by, for example, capitalising the uplift and subtracting some or all of these capitalised amounts from companies' asset bases in future price control periods.

Accelerated depreciation

One way to increase cash flow is to accelerate depreciation payments by shortening the depreciation period. This approach is present value neutral because consumers pay more in the short-term but over the longer term prices are lower due to the average level of the RAB being lower. However, such an approach may not reflect the economic life of the assets being funded and raises questions of intergenerational equity. Ofgem has adopted this approach in the past.

2.5.3. Approaches to financeability in the UK

The current approach to financeability assessment in the UK is to look at the financeability of an efficiently operated company with gearing set at a notional level. It is then left to companies and investors to determine their actual capital structure. The financeability assessment is therefore a check of a set of financial ratios against target levels as applied by ratings agencies. There is also a focus on equity injections to deal with financeability concerns. More detail on the current approach used by Ofgem and Ofwat is included in Annex 2.

However, this has not always been the approach taken by regulators in the UK. For example, as noted above, Ofgem previously made use of accelerated depreciation. The last two electricity distribution price controls before RIIO was introduced assumed an average asset life of around 20 years for assets that had an actual expected life of 40 years. This approach was intended to

address the "cliff face" issue where companies would have a large reduction in their depreciation allowance following the full depreciation of the assets they had at privatisation. This depreciation profile was introduced in one price control period and then was carried over into to the next period. The same approach was taken in electricity transmission.¹²

In the 1999 and 2004 price control reviews, Ofwat provided companies with additional revenue to ensure that they would be able to fund both operations and investments. These were called revenue uplifts and amounted to £188 million in 1999 and £508 million in 2004 (both on 2009-10 prices). These were not necessarily NPV neutral, unlike Ofgem's accelerated depreciation which is. As noted above, Ofwat's approach changed for PR09 where it sought to rely more on market mechanisms for addressing financeability.¹³ This was tested through appeal at the Competition Commission by Bristol Water and Ofwat's approach was upheld.

¹² Ofgem (2010) "Regulating Energy Networks for the Future: RPI-X@20, Emerging Thinking – Embedding financeability in a new regualtory framework", accessed at http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/et%20financeability.pdf

¹³ Ofwat (2011) "Financeability and financing the asset base – a discussion paper", accessed at http://www.ofwat.gov.uk/future/monopolies/fpl/prs_inf1103fpl_financeability.pdf

3. THE MODEL AND SCENARIOS

The IPART regulatory building block model forms the basis of our analysis. First, we have extended the model to cover the period from 2011/12 to 2039/40. Further, the model has been set up to distinguish between regulatory accounts and statutory accounts for the following three scenarios:

- Scenario 1: an existing business undertaking normal asset replacement and renewal and increasing capacity in line with expected growth in demand (the "business as usual" scenario);
- Scenario 2: an existing business that is undertaking a substantial capital investment that will double its asset base in 5 years (the "rapid growth" scenario); and
- Scenario 3: a greenfield "start-up" (the "start up" scenario").

In the following sub-sections, we highlight the key assumptions made to set up the overall model; to distinguish between the notional statutory and regulatory cases; and to set up the individual scenarios. More detail is provided in Annex 3.

3.1. Approach to setting up the overall model

The key distinction drawn between regulatory and statutory accounts is that under the regulatory accounts, there is an inflation adjustment each period to the RAB, as well as to the depreciation of existing and new assets. Under statutory accounts however, we assume that neither the RAB nor depreciation are indexed.

We assume that in Scenarios 1 and 2 under the regulatory accounts from 2012/13 onwards, the regulatory value of the debt gearing ratio is fixed at 60%. We impose this condition by adjusting the dividends payable in each year. The gearing ratio is not fixed in Scenario 3.

We note that in our model, the respective values of the notional revenue requirement, capex, opex and net debt in all three scenarios under the statutory accounts, equal their value under the regulatory accounts from the same period.

A further distinction is drawn between the two sets of accounts in terms of whether a real or nominal interest rate is used to calculate net interest payments. Specifically, we assume that a real interest rate is used in the regulatory accounts, whilst the nominal rate is used in the statutory accounts.

For simplicity, we have assumed that cash capital contributions and value of disposed assets is zero in each period.

These assumptions are summarised in the following table.

Assumption	Regulatory Accounts	Statutory Accounts
Indexation of RAB	Yes	No
Indexation of the depreciation of new and existing assets	Yes	No
Notional Revenue Requirement	Calculated as per building block approach	Value from the regulated accounts is imposed in each period
Dividends Payable	Set each period in Scenarios 1 and 2 in order to maintain a fixed gearing ratio of 60%	Set each period to maintain the same level of net debt as in the regulatory case
Interest rate used to calculate net interest payments	Real interest rate	Nominal interest rate
Cash capital contributions	0 in each period	
Value of disposed assets	0 in each	period

Table 3.1: Assumptions underlying the regulatory and statutory accounts

As noted above, our base assumption is that the notional 60% gearing is achieved in the regulatory model. The question then arises as to what this means for the statutory accounts. Two interpretations are possible:

- the regulatory value of net debt (driven by the 60% of the RAB assumption) is the actual level of net debt held by the company and so the absolute value is imposed on the statutory accounts; or
- the statutory accounts reflect an actual level of absolute net debt which is equal to 60% of the statutory RAB since the company does not actually borrow debt to reflect the increase in the value of the RAB arising from indexation.

We believe the former is closer to the spirit of the regulatory approach in NSW and consequently is the primary assumption and is reflected in the results in the main body of this report. However, this assumption means that the company will take much longer before it benefits from the switch between the cash-flow profiles generated by real and nominal WACCs (explained in the Introduction). Consequently we have prepared a second version of the model which incorporates the alternative assumption about the absolute value of net debt. The results of this are reported in Annex 4 and, unsurprisingly, lead to less of an impact when moving between regulatory and statutory accounts. It should be noted that IPART have indicated that this second method more closely approximates to their current approach.

3.2. Approach to setting up the scenarios

The three scenarios are mainly differentiated in terms of how we interpret the movements in the RAB over time *under the regulatory accounts*. This in turn determines the assumptions made regarding the real investment undertaken by the firm in each period.

Assumptions are also made regarding the level of real operating expenditure, as well as the firm's policy for paying out dividends.
Below, we summarise the assumptions underlying the three scenarios for both regulatory and statutory accounts. These are explored in further detail in Annex 3, particularly in terms of the implications they have for the revenues in each of the scenarios under the different set of accounts.

3.2.1. Scenario 1: Business As Usual/ Steady State

- <u>Real closing value of the RAB</u>: From 2012/13 onwards, the real RAB under the regulatory accounts is constant and equals the closing value in 2011/12.
- <u>Real capex</u>: Investment each period maintains the fixed asset base (in real terms) under the regulatory accounts. Investment under the statutory accounts is equal to the corresponding value under the regulatory accounts.
- <u>Real opex</u>: This is fixed in each period, and equals the real opex in 2012/13 under the original scenario. The level of opex under the statutory accounts is the same as in the regulatory accounts in each period.

3.2.2. Scenario 2: Rapid Growth

- <u>Real closing value of the RAB</u>: The real RAB under the regulatory accounts at the end of 2016/17 is double the value at the end of 2011/12. From 2017/18 onwards, the real RAB in each period is constant and equals the real value at the end of 2016/17
- <u>Real capex</u>: Investment in the first five years facilitates the steady increase in the real value of the RAB. From 2017/18 onwards, investment each period maintains the asset base which is fixed in real terms under the regulatory accounts. The level of capex is the same each period across regulatory and statutory accounts.
- <u>Real opex</u>: Under the regulatory accounts, in each period real opex is a fixed percentage (~8%) of the real opening value of the RAB in that period. We obtained this proportion by estimating the starting opex in 2012/13 under the original scenario, as a percentage of the real opening value of RAB that period. The level of opex under the statutory accounts is the same as in the regulatory accounts in each period.

3.2.3. Scenario 3: Start Up

- <u>Real closing value of the RAB</u>: The real RAB at the end of 2016/17 under the regulatory accounts is equal to the RAB at the end of 2011/12 in the other scenarios. From 2017/18 onwards, the real RAB is constant in each period and equals the real value at the end of 2016/17.
- <u>Real capex</u>: Investment in the first five years facilitates the steady increase in the real value of the RAB. From 2017/18 onwards, real capex each period maintains the fixed steady state real value of the RAB under the regulatory accounts. The level of capex is the same each period across regulatory and statutory accounts.
- <u>Real opex</u>: under the regulatory accounts, real opex in each period is a fixed percentage (~8%) of the real closing value of the RAB in that period. We obtained this proportion

by estimating the starting opex in 2012/13 under the original scenario, as a percentage of the real opening value of RAB in that period. The level of opex under the statutory accounts is the same as in the regulatory accounts in each period.

- <u>Dividend payout ratio</u>: We assume that dividends paid out in the first five years are negative, reflecting equity injections into the firm. These transfers are calculated as 50% of the nominal capex in that year. From 2017/18 onwards, the payout ratio in each year is 70%. As discussed above, the value of the dividends payable under the regulatory accounts are imposed on the statutory accounts.
- <u>Remaining life of existing assets as of 1 July 2012</u>: This is assumed to be 50, as this would be consistent with the expected average life of new assets in the new determination period.

4. **R**ESULTS

4.1. Overview

In this section we present the results for:

- the four financeability ratios in the regulatory and statutory cases (or notional and actual cases) across the three different scenarios: business-as-usual, rapid growth and the start-up; and
- having a higher book value for the asset base than was initially recognised by the regulator in particular, we look at the case where the initial book value is two times the recognised value).¹⁴

The thresholds (or benchmarks) we apply are drawn from IPART's cost building block model for the Funds from Operations (FFO) Interest Cover and Net debt/Regulated Asset Base. For the remaining two ratios which are part of IPART's new approach we use Moody's Baa rating.¹⁵

If we take the business-as-usual scenario as the base case, we can see that there are substantial differences between the statutory and regulatory cases. These differences continue through to the rapid growth case (Scenario 2) but are more limited in the start up case, largely due to the assumptions made in Scenario 3 about how the start up develops.

When we examine the scenarios some issues with financeability do arise, particularly in relation to the FFO to Net Debt ratio and the Retained Cash Flow (RCF) to Capex ratio. For Scenarios 1 and 2, these ratios lie below Moody's investment grade benchmark. This may require some further examination, although these results do need to be interpreted with some caution. For example, in the case of the RCF to capex ratio the level and movement of the ratio reflects the assumptions about the payment of dividends which in this model are set in the regulatory case to keep the gearing ratio to 60%. Given that in reality there is some discretion about when and how much to pay in dividends, this may not be considered to be a financial issue.

Detailed results and further discussion for the ratios across the different scenarios and cases are set out below.

¹⁴ The capex values in this case are assumed to be the same as in the base case for Scenario 1. These are determined in the regulatory model and are therefore not affected by the different assumption about the size of the statutory asset base.

¹⁵ See IPART (2012) "Financeability test in price regulation", at p.30

4.2. Model outputs

4.2.1. Scenario 1: Business as usual

Figure 4.1: Financial ratios for Scenario 1



4.2.2. Scenario 2: Rapid growth

Figure 4.2: Financial ratios for Scenario 2



4.2.3. Scenario 3: Start up





4.3. Discussion

4.3.1. Scenario 1: Business as usual

Figure 4.1 (above) shows the results for the financial ratios in Scenario 1 in both the statutory and regulatory cases. In this section, we examine each ratio in turn.

FFO Interest Cover

The FFO Interest Cover is higher in the regulatory case than in the statutory case. This is a result of the FFO being higher in the regulatory case and the interest payments being lower. Much of this result is driven by the higher interest payments that accrue in the statutory case because a nominal rate of interest is applied rather than the real rate of interest. The divergence between the statutory interest payments (Interest S) and the regulatory interest payments (Interest R) is shown in Figure 4.4.





The higher interest rate in the statutory case also leads to a lower level of profit which in turn affects the FFO, although this is partially offset by a lower level of tax. Finally, the indexation of the RAB in the regulatory case and the resulting higher RAB leads to a higher level of depreciation which adds to the FFO in the regulatory case. The divergence in the level of depreciation is shown in Figure 4.5.



Figure 4.5: Depreciation, Scenario 1, statutory and regulatory

Debt gearing

In relation to debt gearing, the regulatory ratio is set at the notional 60% level through adjustments to the dividend payouts. On the other hand the statutory ratio is allowed to vary and shows an increasing trend over time. As the level of net debt is set in the regulatory case and applied in the statutory case, the difference is a result of the different RAB in the two cases. In particular, as the RAB is not indexed in the statutory case, it increases only slightly over time as a result of the capex coming out of the regulatory model. The divergence in the statutory RAB (RAB S) and regulatory RAB (RAB R) over time due to the lack of indexation in the statutory approach explains the difference in the debt gearing.





As shown in Annex 4, when the underlying assumption about the absolute value of net debt is changed the impact on the debt gearing also changes.

FFO to Net Debt

As in the case of the FFO Interest Cover ratio, the FFO is higher in the regulatory case, largely due to the lower interest payments and the higher level of depreciation. This means that the FFO to Net Debt ratio for the regulatory case lies above the ratio for the statutory case. The difference between the two ratios is driven by the FFO as the net debt is set in the regulatory case and applied in the statutory case. As noted in the overview, the FFO to Net Debt ratio lies below Moody's benchmark for regulated water companies.

RCF to Capex

The RCF to Capex ratio is the same for both the statutory and regulatory cases. The level of capex is set under the notional approach and is the same in both cases. The retained cash flow is also the same in both cases due to an offsetting effect between the level of pre-tax profit and the dividends paid. This is a result of the model's use of dividend payments to ensure that the notional level of gearing is maintained in the regulatory case. This ratio also lies below the Moody's benchmark in both cases, however, it is dependent on the level of dividend payouts and the regulated company has some discretion on the level of those payouts hence this may not be a cause for concern.

4.3.2. Scenario 2: Rapid growth

Figure 4.2 (above) shows the results for the financial ratios in Scenario 2 in both the statutory and regulatory cases. In this section, we examine each ratio in turn.

FFO Interest Cover

As in the business as usual case, the FFO Interest Cover is higher in the regulatory case than in the statutory case. Again this is a result of the FFO being higher in the regulatory case and the interest payments being lower. Changes in the FFO over the period are shown in Figure 4.7. There is a dip after the five-year investment period (following 2016/17) as the working capital requirements drop sharply in line with the reduction in net capital expenditure and then the FFO grows steadily once business as usual resumes.



Figure 4.7: FFO, Scenario 2, statutory and regulatory

The divergence in the interest payments in the statutory and regulatory cases in Scenario 2 is shown in Figure 4.8.

Figure 4.8: Interest payments, Scenario 2, statutory and regulatory



Debt gearing

As in Scenario 1, the difference in the debt gearing ratio between the statutory and regulatory cases is driven by the difference in the RAB. This is shown in Figure 4.9.



Figure 4.9: RAB, Scenario 2, statutory and regulatory

FFO to Net Debt

As above, the FFO is higher in the regulatory case, largely due to the lower interest payments. The difference between the two ratios is driven by the FFO as the net debt is set in the regulatory case and applied in the regulatory case. For Scenario 2, both the statutory and regulatory ratios lie below the Moody's investment grade benchmark.

RCF to Capex

The assumptions in our model mean that the RCF to capex is the same in both the and regulatory cases. In our model, there are equity injections during the period of heavy investment which elevates the retained cashflow. Once the investment has finished dividend payments resume and the RCF falls. Over time this ratio begins to increase again.

4.4. Scenario 3: Start up

Scenario 3 involves a new business with significant investment and hence it is to be expected that the ratios are significantly different to the other scenarios. Figure 4.3 shows the results of the different ratios for Scenario 3.

FFO Interest Cover

The FFO increases over the period, with steep increases during the initial investment phase and then slower increases once business as usual begins. This can be seen in Figure 4.10.



Figure 4.10: FFO, Scenario 3, statutory and regulatory

The pattern is quite different for the interest payments. These are initially increasing as investment takes place and then over time these payments fall where investment reverts to maintenance of the RAB, until eventually interest payments are actually reduced to zero (this causes the significant shift in the FFO interest cover chart in 2036/37). This is shown in Figure 4.11.

Figure 4.11: Interest payments, Scenario 3, statutory and regulatory



Debt gearing

In Scenario 3, the debt gearing falls over the regulatory period for both the regulatory and statutory cases. This reflects the net debt which rising during the first five years (the investment period) and then falls subsequently.

FFO to Net Debt

There is only a marginal difference in the ratios for the statutory and regulatory cases in Scenario 3. This reflects the fact that the FFO is very similar, as shown above and the net debt is the same between the two approaches. Again, a point is reached where net debt falls to zero and this can be seen in the significant change in the ratio in 2036/37.

RCF to Capex

The RCF to Capex ratio is below the Moody's benchmark during the first five years (while investment is occurring) and then increases to above the benchmark once the rapid growth period has finished. This demonstrates that in cases of high growth there can be temporary issues with financeability that resolve themselves over time as business as usual resumes.

4.5. Higher opening book value

A particular issue noted by stakeholders was that the opening book value for the asset base was significantly lower than the companies estimates of the value of the asset base. For example, the RAB was set in 2000 at around \$13 billion whilst Sydney Water estimates that the replacement cost of its assets at that time was around \$30 billion.¹⁶ We have included this in our model by allowing a multiple of the RAB in the statutory case. Based on the difference noted by Sydney Water, the discussion which follows is based on the opening value of the RAB being twice as high as the regulated value. The impact on the ratios is shown in Figure 4.12.

Overall, recognising the higher statutory RAB value has a limited impact on the ratios, aside from on the gearing. This is because many of the components of the FFO are set in the regulatory model and are then applied in the statutory model. This is also true of the level of net debt hence leading to the same interest payments in the statutory cases (despite having different RABs). The gearing ratio is improved under the case with the higher RAB value (Statutory 2x) as the net debt remains the same but the RAB is now higher.

Figure 4.12: Higher opening book value – impact on ratios



5. **DISCUSSION OF RESULTS**

The results of our ratio analysis indicate that there can be significant differences in the financeability ratios depending on whether these are calculated on a notional (regulatory) or actual (statutory) basis. However, as shown in Section 4 and Annex 4 this does depend in great part on the "regulatory model" assumptions about the level of net debt as well as the starting point for the company.¹⁷ In this section, we consider further whether this has any implications for how financeability assessments should be conducted and the form of financing.

In particular, we look in more detail at:

- Adjustments to the calculation of the financial ratios and the implications for the benchmarks that should be used;
- The period over which financeability analysis should be undertaken; and
- The implications for the use of financeability analysis as a cross-check on the building block analysis and WACC assumptions.

5.1. Financial ratio adjustments and benchmarks

IPART's revenue projections are determined using a building block approach and are based on the requirements of a notionally efficient company. The financeability test is used to identify potential issues that may arise and to provide a framework for making any necessary revenue adjustments. In identifying an approach to financeability, it is important that the use of the financeability test and any associated adjustments do not create incentives which are incompatible with IPART's regulatory objectives for both consumers and the regulated companies.

As noted above, the building block approach uses a notional capital structure and notional debt costs to determine the appropriate revenue projections for the regulated companies. The use of notional data should be part of the building blocks process and any financeability test but actual data may also serve as a useful cross-check on the financeability aspects of the decision.

Failure to assess the actual costs of a regulated company may put the regulator at risk of not fulfilling its objective to ensure that the regulated company is financially sustainable (assuming it has been financed efficiently). In being able to do this properly, there is a need to accurately project the company's future strength and debt costs, with the latter being more certain when a higher percentage of debt is fixed or pre-hedged. There will also be interest rate risk which is typically a function of real term revenues and nominal term expenditures. This explains why notional data should not be used in isolation, with a moral hazard argument explaining why actual data should not be used as the only part of a financeability test.

The UK Competition Commission set out the problem with such an approach in its Bristol Water decision¹⁸:

¹⁷ Also, the fact that in both the regulatory and statutory cases some of the ratios are failed is reflective of possible issues with the existing regulatory regime rather than differences between the regulatory and statutory calculations.

¹⁸ UK Competition Commission (2010) Bristol Water plc price determination, Appendix O, p.O10

"The implication of Bristol Water's argument that a company's actual balance sheet figures should be used is that a company can increase its borrowing in order to pay out large amounts to its shareholders, then require the regulator to secure its financeability, for example via an uplift in the cost of capital, or by allowing higher prices. This has the effect that customers pay more to offset the increase in risk that the company itself has created through increased borrowing."

The problem with actual data is that a company could leverage significantly above the notional gearing level, in the knowledge that they could be compensated with a financeability adjustment. In the UK water sector, Ofwat has used notional gearing in its financeability modelling as industry gearing has increased to 70%, above the notional level, and the regulator wanted to leave decisions regarding capital structure and dividends to the companies' management. IPART has expressed a preference to do likewise. As noted earlier, the way that interest rates are set by IPART could act as a constraint on companies gearing up as currently they are unable to recover the full interest cost they face and consequently gearing up would exacerbate this problem due to the companies use of nominal debt.

The application of Moody's quantitative methodology for determining credit metrics and appropriate benchmarks is a transparent and consistent approach. If financeability assessments are to be made on a notional basis, it will be important to ensure that ratings agencies have access to the information needed in making such an assessment. For example, in the UK it is common to have both statutory and regulatory accounts that are made publically available.

5.2. Period for financeability analysis

The upcoming regulatory period should not be the sole concern for IPART, with the long term viability of regulated companies being paramount. Despite this, the forthcoming regulatory period would in each case be the period with which there is greatest certainty over expenditures and revenues and the period for which these would be fixed. Therefore we think that it is appropriate that this is the primary focus of the regulator. As the results in Figures 4.1 to 4.3 demonstrate, after a number of regulatory periods, the ratios are driven by assumptions, such as the level of capex necessary for maintaining the RAB, and hence provide less certainty about the regulated company's financeability going forward.

On the other hand, the results also demonstrate the importance of looking beyond the initial regulatory period where significant investment is taking place. For example, the RCF to capex ratio is significantly different in Scenarios 1 and 2 where investment is taking place and then changes again when business-as-usual situation resumes or begins.

5.3. Implications for financeability analysis as a cross-check

Financeability analysis is often viewed as a cross-check on the outputs of the building block analysis and WACC assumptions. However, where financeability ratios are not met this does not automatically imply a financeability issue. Estimation of the WACC is subject to some uncertainty and not all of the input values for the building blocks approach will be 'right'. For example, in the case of regulated water companies in NSW a particular issue has been raised with IPART's approach to depreciation. As noted earlier in this report, this in part arises from the decision about which assets are included in the RAB. Further, where a financeability issue has been identified before looking at revenue adjustments, IPART should first ensure that reasonable steps have been taken by the regulated company. This might include reduced dividends, possible capex deferrals, equity injections and the use of indexed debt. Some regulated companies in the UK make significant use of indexed debt, however, it should be noted that problems can still arise where the maturity of the debt differs from the asset life.

IPART's building block methodology permits smoothing mechanisms such as a glide path, but it also has the power to do this should a company's highly leveraged structure be responsible for financeability problems. If a company has conservative gearing and still presents financeability issues, this would be suggestive of problems which may require revenue adjustments from the regulator.

As indicated in our ratios for Scenarios 2 and 3, it may be that the problems identified are to do with a mismatch of revenues and expenditure in the short term, but it is our expectation that these should be able to be solved by capital market instruments. If this is not the case, IPART should first identify any NPV neutral pricing adjustments if this is possible without merely delaying financeability problems into future regulatory periods. This approach will weaken the financial viability in the long-run and it raises the issue of inter generational equity, but should be considered as a possibility before looking at a NPV positive pricing adjustment for the company. If the financeability test run as a cross check has indicated problems that cannot be dealt with by company management, such an adjustment will be required, which could be through an increase in the allowed cost of capital.

Consequently the financeability tests should be viewed as a useful input to the discussion about the appropriateness of the overall regulatory package rather than a pass/fail test. If financeability issues are high-lighted then it is important to understand the reasons for this and agree the most appropriate corporate and regulatory responses that are required.

ANNEX 1: DIFFERENCES BETWEEN STATUTORY AND REGULATORY ACCOUNTS

Approach

IPART has asked for some consideration of the differences that may arise in the calculation of financial ratios when these are based on the information provided in regulated companies' statutory accounts as compared to the data used by regulators in making price determinations.

In particular, we look at the impact of these two approaches on the calculation of the following four ratios:

- Funds from operations interest cover
- Funds from operations over net debt
- Debt gearing (regulatory value)
- Retained cash flow to capex.

We examine each of these ratios in turn.

Funds from operations interest cover

Definition: Funds From Operations (FFO) plus interest expense divided by interest expense

Calculated as: (A) (FFO + net interest expense)/net interest expense

Next we consider these elements further to determine where the differences might be between the regulatory and statutory approaches.

(1) FFO = profit before tax + depreciation and amortisation – tax paid (tax payable) + Δ working capital

where:

(2) Profit before tax = EBIT – net interest payments

and

(3) EBIT = EBITDA - depreciation

Substituting equations (2) and (3) into (1) we have:

(4) $FFO = EBITDA - depreciation - net interest payments + depreciation - tax payable + <math>\Delta$ working capital

Using (4) in (A) we now have:

(5) FFO (EBITDA – net interest payments – tax payable + Δ working capital) + net interest expense/net interest expense

Hence (A) becomes:

(6) EBITDA – tax payable + Δ working capital/ net interest expense

The following implications for the elements of the calculation are likely.

EBITDA

EBITDA = total revenue - operating costs

Total revenue = revenue from sales + other regulatory revenue allocated to customers Operating costs = operating expenditure * index applied to forecast costs and revenues *Should not differ significantly under the two approaches*

Tax payable

Under the regulatory approach this is based on pre-tax profit times the statutory rate of tax. IPART is now using a real post-tax WACC in calculating allowances for returns. A pre-tax WACC used to be employed with an assumed statutory rate. The statutory tax rate is 30%. Taxable income is used but with deductions for operating cost allowance, tax depreciation and interest expenses.

Will differ between the two approaches as profits are higher under the statutory accounts

Working capital

The change in working capital is calculated as:

 $[(\text{Receivables}_{t} + \text{Inventory}_{t} - \text{Payables}_{t}) - [(\text{Receivables}_{t+1} + \text{Inventory}_{t+1} - \text{Payables}_{t+1})]$

Should not differ significantly under the two approaches

Net interest expense

Net interest payments = (Debt – cash assets) *(nominal interest rate *adjustment factor)

Where Debt = opening debt - net cash flow

Cash flow = cash flow from operations + cash flow from investing + cash flow from financing

Cash flow from operations = receipts from customers – operating costs – tax paid + Δ working capital

Cash flow from investing = sale of assets (disposals) + purchase of assets + cash capital contributions

Cash flow from financing = interest + dividends

Cash assets = opening cash asset + Δ debt + Δ net cash flow

(However, it looks like the Δ debt is offset by the Δ cash flow)

Will be some differences between the two approaches

Implication for the ratio

Based on the analysis above, we would expect the ratio calculated with the statutory accounts to have a lower value than the regulatory accounts as the increased tax payable reduces the numerator while the nominal interest charge increases the denominator.

Funds from operations over net debt

Definition: FFO divided by net debt

Calculated as: FFO/net debt (currently total debt is used)

NB. The existing model calculates FFO over total debt. Net debt is defined as: Total Debt – Cash – Investments. In practice, just Total Debt – Cash Assets is used in the model.

Again the FFO element of this calculation will be affected by the different tax treatment. This enters the equation directly as tax payable and indirectly through the net interest payment.

The net debt element will also be affected by the tax rate through net cash flow.

Implication for the ratio

Given the analysis above, we expect the ratio calculated with the statutory accounts to be lower than that under the regulatory accounts (although the difference is likely to be smaller than for the FFO Interest Cover). This is because the FFO will fall (as noted above owing to the tax change) and the net debt is likely to be relatively unchanged. This will reduce the value of the ratio.

Debt gearing (regulatory value)

Definition: Debt divided by regulatory value of fixed assets plus working capital

Calculated as: (Debt – cash assets)/(Regulatory value of fixed assets + working capital)

As above, the net debt element will differ with the tax paid (through net cash flow).

The fixed assets element will also differ between the two approaches.

Under the regulatory approach, fixed assets are included in the RAB.

RAB closing value = opening value (penultimate year of previous determination) + capex – disposals – allowed depreciation + indexation.

Implication for the ratio

Given the analysis above, we expect the ratio calculated with the statutory accounts to be higher than that under the regulatory accounts. This is because the net debt is relatively fixed (or may be higher owing to the tax implication for cash assets) while the value of the assets will be lower owing to the removal of the indexation. So, a larger numerator and a smaller denominator will lead to an increased value for the ratio.

Retained cash flow to capex

Definition: FFO minus dividends paid divided by capex.

Calculated as: not calculated however all these elements are in the spreadsheet.

As above, the FFO element will be affected by tax treatment. Dividends may also be subject to different tax treatment.

Implication for the ratio

Given the analysis above, we expect the ratio calculated with the statutory accounts to be lower than that under the regulatory accounts. This is because:

- FFO is lower (as explained above);
- Dividends should be unchanged; and
- Capex should be unchanged.

Consequently the numerator will be smaller while the denominator is unchanged. This will lead to a decreased ratio value.

Conclusion

This annex has reviewed the implications of the move from regulatory to statutory accounts for the four main ratios used by IPART. The impact is summarised in the table below.

Table A1: Likely impact on ratios of moving from regulatory to statutory accounting

Ratio	Impact	Comment
FFO Interest Cover	Lower	Driven by increased tax and higher net interest payments
FFO over net debt	Lower	Driven by increased tax and possibly higher net debt
Debt gearing	Higher	Driven by possibly higher net debt and a lower RAB
Retained cash-flow to	Lower	Driven by increased tax
capex		

The quantum of change is less clear cut and is best illustrated through the scenarios discussed elsewhere in this report.

ANNEX 2: UK APPROACHES TO DEALING WITH FINANCEABILITY ISSUES

Box A2.1: Financeability in the UK energy sector

Assessment of financeability

In assessing financeability Ofgem looks at the ability of a notional efficient network company attaining a 'comfortable investment grade' credit rating, where the rating lies in the BBB-A range. The financeability assessment looks at six credit ratios in particular, including:

- FFO/interest;
- Post-maintenance interest cover ratio;
- RCF/net debt;
- RCF/capex; and
- Net debt/RAB.

Two equity ratios are also examined, including:

- Regulated equity/EBITDA; and
- Regulated equity/regulated earnings.

Ofgem's financeability assessment is not intended to replicate the approach taken by ratings agencies and does not require notional companies to achieve all target ratios in all years of the price control period.

The central case examined by Ofgem looks at the level of expenditure set out in its Final Proposals. This is supplemented by a range of sensitivities and stress tests, however, these simulations are considered to provide a supporting piece of evidence rather than being core to the financeability assessment. The financial model used by Ofgem is based on the calculation of base revenue so revenue derived from incentives and output measures is excluded. This is considered to provide a more stringent test of financeability.

To assess financeability the weakest three year average for each ratio was used in combination with a methodology for weighing credit ratios and qualitative factors to come up with a final score.

Dealing with financeability

In the gas distribution case, Ofgem's assessment of its final proposals and scenarios indicated that all companies were financeable and achieved investment grade credit ratings. Companies were concerned about financeability issues arising from timing delays between when costs were incurred and when they were funded. Under the RIIO principles, short-term cash flow variations should be managed by network companies. However, in the case that there were systematic differences between costs and revenues this would need to be taken into account. In this case, the timing impact led to a weakening of ratios in the first two years, however, there was an adjustment to cash flows in the third year. This kind of pattern repeats throughout the price control period. Ofgem considered that overall the distribution companies were financeable even with the timing issue.

Ofgem further noted that credit ratios account for around a third of the assessment by rating agencies and that the broader context for the notional company needs to be considered. In particular, Ofgem gives some weight to the low business risk of monopolistic network companies with a stable and transparent regulatory framework.

We can look to Ofgem's previous gas transmission review (for 2007-2012) to see how financeability issues were dealt with. Ofgem's analysis here assumed that where key financial ratios showed a deteriorating trend that would lead to below investment grade rating in the final year of the

assessment then in order to stabilise the ratios new equity would be assumed to have been raised earlier in the period. In this particular case, Ofgem found that financeability issues were only likely to arise for the Scottish transmission operators which had high capital expenditure.

Source: Ofgem (2012)¹⁹; Ofgem (2006)²⁰

Box A2.2: Financeability in the UK water sector

Assessment of financeability

Ofwat's most recent determination was appealed to the Competition Commission (CC) by Bristol Water hence the approach outlined below details both Ofwat's approach and the CC's consideration of that approach. The CC noted that the purpose of the financeability assessment was to serve as a cross-check on whether a water company could comply with licence conditions based on the regulator's determination. The assessment of financeability involves reviewing financial ratios and comparing projected levels of those ratios using a given cost of capital with certain target levels. The target financial ratios for Ofwat are generally consistent with an A-/A3 credit rating. Key ratios considered by Ofwat included:

- Cash interest cover;
- Adjusted cash interest cover;
- Funds from operations to debt;
- Retained cash flow to debt; and
- Gearing.

As part of its analysis, Ofwat considered the ratios in the base case and also against some realistic downside scenarios.

In calculating the ratios, Ofwat considered the balance sheet from company final business plans and then adjusted cash balances to make net debt equivalent to 52.5 per cent of the RAB (in the case of Bristol Water). This was consistent with the gearing assumption that was used in calculating the cost of capital . In Bristol Water's case, there was also an assumption that new equity capital would be raised. The CC took a similar approach and looked at Bristol Water's actual financial structure as a starting point and then considered whether at the gearing used for the WACC financial projections were consistent with maintaining an appropriate credit rating.

Bristol Water argued at the CC that to ensure it maintained an investment grade credit rating the appropriate financial structure to use was the actual financial structure of the company. However, the CC did not accept this view and considered that basing the assessment on actual conditions was likely to guarantee a return regardless of a company's performance. The CC agreed with Ofwat that the actual financial structure is a decision for the company and is at the company's own risk. With this in mind, the CC considered that assessments could be made on the basis of assumptions as to financial structure that were considered to be reasonable for gearing (as long as similar adjustments were used to calculate the WACC), even where this included assumptions about shareholders supplying finance.

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GD1/ConRes/Documents1/3 RIIOGD1 FP Finance and uncertainty.pdf
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¹⁹ Ofgem (2012) "RIIO-GD1: Final Proposals – Finance and uncertainty supporting document", accessed at <u>http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-</u>

²⁰ Ofgem (2006) "Transmission Price Control Review: Final Proposals", accessed at <u>http://www.ofgem.gov.uk/Networks/Trans/Archive/TPCR4/ConsultationDecisionsResponses/Documents1/16</u> <u>342-20061201_TPCR%20Final%20Proposals_in_v71%206%20Final.pdf</u>

In addition, as financeability relates to an efficient company the financial ratios should be considered before performance and incentive adjustments are applied.

Dealing with financeability

Ofwat considered that options relating to equity, for example, the issuance of new equity and retained earnings could be part of the solution to easing any financial constraint. While each company is free to organise its own capital structure, Ofwat considers that this is at its own and its investors' risk.

Bristol Water suggested a number of potential solutions in the case of financeability issues, including:

- Changing the initial gearing;
- Increasing the proportion of debt that is considered to be index-linked;
- Raise equity/constrain dividends;
- Constrain capital expenditure;
- Increase prices during the price control period (with an offset); and
- Increase prices during the price control period (without an offset).

Bristol Water's favoured approach was the sixth option.

The CC noted that the implication of Bristol Water's argument about using a company's actual balance sheet figures was that a company could increase its borrowing in order to pay out large amounts to shareholders and then require the regulator to secure its financeability by, for example, allowing higher prices. The effect of this would be to make customers pay to offset the increase in risk generated by the company's increased borrowing.

The CC further noted that if a financeability assessment produced low interest coverage ratios this may indicate that the company's actual gearing is too high to maintain an investment grade credit rating when funding business expansion through debt and paying dividends to shareholders. Such an outcome might occur with strong RAB growth. In such a case, growth may need to be financed through means other than debt to maintain the relevant credit rating in the expansion phase. For example, shareholders might have to fund investment through equity (either decreased dividends or an equity injection).

In this case, it was the CC's conclusion that no special measures needed to be taken so the other potential solutions were not considered in detail.

Source: Competition Commission (2010)²¹

²¹ Competition Commission (2010) "Bristol Water plc: A reference under section 12(3)(a) of the Water Industry Act 1991", accessed at <u>http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2010/fulltext/558_final_report.pdf</u> and the appendices accessed at <u>http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2010/fulltext/558_appendices.pdf</u>

ANNEX 3: CEPA'S MODEL AND SETTING UP THE SCENARIOS

Extension of the model provided by IPART

The model has been set up to reflect the following three scenarios, as requested in the ToR:

- Scenario 1: an existing business undertaking normal asset replacement and renewal and increasing capacity in line with expected growth in demand;
- Scenario 2: an existing business that is undertaking a substantial capital investment that will double its asset base in 5 years; and
- Scenario 3: a greenfield "start-up".

We have extended the starting regulatory building block model to cover a longer period of time. The model now covers the period from 2011/12 to 2039/40.

In the sub-sections below, we set out the key assumptions we have made in each case, drawing a distinction between statutory and regulatory accounts where necessary. We illustrate also the implications for changes in the regulatory asset base (RAB) and regulatory revenues. As outlined in the main report, we note that the respective values of the notional revenue requirement, capex, opex and net debt are imposed on to the statutory accounts in the corresponding period.

Please note that for simplicity, we have assumed that cash capital contributions and value of disposed assets is zero in each period under all the three scenarios.

Scenario 1: Business As Usual/Steady State

Assumptions

Capex

- *Regulatory accounts*: The real value of capex in each period has been calculated such that the real closing value of RAB from 2012/13 onwards is constant and equals the real closing value of RAB in 2011/12.
- *Statutory accounts*: The real value of capex in each period is the same as in the regulatory accounts.

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Opex

Real opex in each period is set to equal the real opex in 2012/13 under the original scenario.

Figure A3.3: Changes in Opex under Scenario 1



Impact on regulated revenues

The implications of the assumptions underlying this scenario for the regulated revenues, are reflected in Figure A2.4 below. In particular, a constant RAB in real terms under the regulated accounts implies that the revenues in real terms will also be steady, with limited variation over time.





Scenario 2: Rapid Growth

Assumptions

Capex

- *Regulatory accounts:* Real capex in the first five years has been calculated such that there is a steady increase in the real value of RAB during this period. Specifically, the real closing value of RAB at the end of 2016/17 is double the real closing value of RAB at the end of 2011/12. From 2017/18 onwards, real capex has been set such that the real closing value of RAB in each period is constant and equals the real closing value of the RAB at the end of 2016/17.
- *Statutory accounts*: The real value of capex in each period is the same as in the regulatory accounts.





Figure A3.6: Changes in Capex under Scenario 2



Opex

- Regulatory accounts: We assume that real opex in each period is a fixed percentage (~8%) of the real opening value of the RAB in that period. We obtained this proportion by estimating the starting opex in 2012/13 under the original scenario, as a percentage of the real opening value of RAB that period. Given that the real RAB is constant from 2017/18 onwards, real opex will also be constant from this period on.
- *Statutory accounts:* The real value of opex in each period is the same as in the regulatory accounts.



Figure A2.7: Changes in Opex over time under Scenario 2

Impact on regulated revenues

Given the significant increase in the RAB in the first five years, there is a corresponding increase in regulated revenues during this period, under both regulatory and statutory accounts. From 2017/18 onwards, although not completely constant, real revenues are relatively steady and show limited movement over time, reflecting the steady state equilibrium of the real RAB.



Figure A3.8: Changes in revenues under Scenario 2

Scenario 3: Start Up

Assumptions

We assume that the opening RAB at the start of 2012/13 is 0

Capex

- Regulatory accounts: Real capex in the first 5 years is set such that the real closing value of the RAB at the end of 2016/17 is equal to the real closing value of the RAB at the end of 2011/12 under the other scenarios. From 2017/18 onwards, real capex is set such that the real closing value of the RAB is constant in each period and equals the real closing value of the RAB at the end of 2016/17.
- *Statutory accounts*: The real value of capex in each period is the same as in the regulatory accounts.

CONSULTATION DOCUMENT



Figure A3.9: Changes in RAB under Scenario 3

Figure A3.10: Changes in Capex under Scenario 3



Opex

- Regulatory accounts: We assume that real opex in each period is a fixed percentage (~8%) of the real *closing* value of the RAB in that period. We obtained this proportion by estimating the starting opex in 2012/13 under the original scenario, as a percentage of the real opening value of RAB in that period. Given that the real RAB is constant from 2017/18 onwards, real opex will also be constant from this period on.
- *Statutory accounts:* The real value of the opex in each period is the same as in the regulatory accounts.



Figure A3.11: Changes in Opex under Scenario 3

Other assumptions

The remaining life of existing assets as of 1 July 2012 is assumed to be 50, as this would be consistent with the expected average life of new assets in the new determination period.

Impact on regulated revenues

Given the significant increase in the RAB in the first five years, there is a corresponding increase in regulated revenues during this period. From 2017/18 onwards, real revenues are relatively steady with a limited increase in absolute terms during this time.



Figure A3.12: Changes in revenues under Scenario 2

ANNEX 4: ALTERNATIVE MODEL RESULTS

A4.1 Introduction

In general as discussed in the introduction to the report, we would expect the interest cover ratio to start off higher in the regulatory case as the interest rate is lower but then to fall below the interest cover ratio in the statutory case as the need to fund a higher (indexed) RAB results in higher net debt and therefore higher interest payments.²² In the statutory case, the opposite story results because the interest rate is higher but the RAB is not indexed and therefore interest payments fall, in relative terms, over time. In the model presented above this outcome does not result. In fact, under the business-as-usual case (Scenario 1) the FFO interest cover for the regulatory case is always higher than in the statutory case. This results from two particular assumptions in the model:

- The regulatory model applies a real rate of interest to the level of debt while the statutory model applies a nominal rate of interest; and
- The net debt is determined in the regulatory case and is applied in the statutory case. Further, assets are treated as new in each determination so the level of net debt is maintained at a fairly constant level over the period examined.

As noted above and in the main report, a significant portion of the results in our model are driven by assumptions about movements in the level of net debt. In this alternative model, we therefore examine the four ratios under a different net debt assumption.²³ In particular, this alternative model takes the following approach to net debt:

- The opening RAB is the same in both the statutory and the regulatory case.
- Opening net debt is calculated as 60% of the opening RAB and therefore starts from the same point for both cases.
- Following the opening year, net debt increases in each case by adding 60% of the net increase in investment i.e. any capex for the year minus depreciation. Net investment will differ between the statutory and regulatory cases because while capex is the same in both (and is set in the regulatory model), depreciation will be based on the RAB.

In this annex we examine the results of this alternative assumption.

A4.2 Results

The results of the alternative model (and comparisons to CEPA's original model) are set out below.

²² This is the cash-flow impact discussed in the Introduction.

²³ While we believe the assumption used in the main report is consistent with the regulatory approach adopted by IPART, the results arising from the assumption raise concerns and their robustness can be tested through this alternative model.

A4.2.1 Scenario 1: Business-as-usual

Results





Alternative model

Discussion

In general, the alternative modelling of the net debt presented in this Annex leads to an improvement of the ratios for the statutory case in the business-as-usual scenario. This is particularly true for the FFO interest cover and FFO net debt ratios. In the case of the FFO interest cover, the improvement of the statutory ratio over time is a result of the slower increase in interest payments which in turn is a result of the more limited increase in net debt in the statutory case. These results are shown in Figure A4.2 and Figure A4.3 below.



Figure A4.2: Statutory and regulatory interest payments, Alternative Model, Scenario 1

Figure A4.3: Statutory and regulatory net debt, Alternative Model, Scenario 1



Debt gearing remains at 60% for both the statutory and regulatory cases in this scenario. This results from similar movements in the net debt and RAB over the period. On the RCF to capex ratio this is driven by a large payout in the initial year followed by more modest payouts throughout the rest of the period.

A4.2.2 Scenario 2: Rapid growth

Results

Figure A4.4: Comparison of the CEPA model and alternative model, Scenario 2



Alternative model


Discussion

In Scenario 2, there is a similar change in the FFO interest cover and FFO net debt ratios in the statutory case as was described above for Scenario 1. That is, the ratios start below their regulatory counterparts but then improve and eventually exceed the regulatory ratios as net debt and therefore interest payments increase more slowly. Movements in the interest payments and net debt are set out below in Figures A4.5 and A4.6.



Figure A4.5: Statutory and regulatory interest payments, Alternative Model, Scenario 2

Figure A4.6: Statutory and regulatory net debt, Alternative Model, Scenario 2



There is also some divergence between the ratio for RCF to capex in the statutory and regulatory cases. This is largely a result of the different dividend payouts (and in turn the RCF) as capex is the same in both cases. In particular, the equity injection in the statutory model is such that the RCF does not drop below zero after the initial year and therefore the RCF to capex ratio also remains above zero in the statutory case. The RCF is comprised of FFO minus any dividend payouts and the changes in the FFO and the dividends over the period are set out below. In

both cases there are equity injections during the period of heavy investment and then dividend payouts start again once business-as-usual resumes.



Figure A4.7: Statutory and regulatory FFO, Alternative Model, Scenario 2

Figure A4.8: Statutory and regulatory dividend payouts Alternative Model, Scenario 2



A4.2.3 Scenario 3: Start up

Results

Figure A4.9: Comparison of the CEPA model and alternative model, Scenario 3

CEPA model

Alternative model



Discussion

In Scenario 3, which involves a start up company, much of the difference in the results for the statutory and regulatory cases derives from movements in the level of net debt. In particular, in the statutory case gearing is maintained at around 60% of the RAB whilst in the regulatory case gearing drops sharply as the level of net debt falls. Changes in the level of net debt over the period for the statutory and regulatory cases are shown below.



Figure A4.1.0: Statutory and regulatory net debt, Alternative Model, Scenario 3

C Real vs nominal regulatory model

Two of the main cost drivers that feed into the building block model are:

- operating costs: include employee-related costs, maintenance expenses and other overheads that are incurred in the current period
- cost of capital: based on the RAB and estimated efficient WACC.

Operating costs are provided by a utility in real dollars. These costs are effectively 'passed-through' in real terms into regulated prices. It is reasonable to expect that these costs generally follow inflation. Therefore, real regulated prices which are adjusted annually for inflation provide for a utility to recover its operating costs.

A utility's actual cost of capital is not passed-through into prices. Instead, the building block model relies on an estimate of the efficient cost of capital. The efficient cost of capital may differ from a utility's actual cost of capital. This provides a strong incentive for a utility to work towards achieving the efficient cost of capital.

- A utility's actual cost of capital depends on its actual levels of debt and equity and the actual costs (ie, cost of debt and cost of equity) of these funds.
- The efficient cost of capital determined by IPART is our best estimate of the cost of capital that could be achieved by an efficient benchmark firm facing similar risks. The efficient cost of capital depends on the RAB, an assumption about the efficient capital structure (ie, gearing ratio), and an estimated WACC.

The WACC is estimated from current market data quoted in nominal percentage terms. This produces an estimate of the efficient WACC that is a nominal percentage figure. However, in order to incorporate our estimate of the efficient WACC into the building block model, we must convert it from nominal to real using the following formula:

 $WACC_{REAL} = [(1+WACC_{NOMINAL}) / (1+Inflation)] - 1$

This formula essentially removes the inflation component of the WACC. In order to ensure that a utility is compensated for the inflation component of the WACC, RAB is indexed to inflation at the beginning of the next regulatory period. Over the long term, the total return on capital is equivalent under either a nominal or real WACC approach (ie, using a nominal WACC with no RAB indexation or using a real WACC with RAB indexation). However, using a real WACC results in regulated prices that generate relatively lower cash flows in early years and relatively higher cash flows in later years.