

# Regulatory ‘financial tramlines’ for Scottish Water

## Note prepared for WICS

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### 1 Summary and introduction

#### 1.1 Summary

In the context of its I<sup>3</sup> Project, the Water Industry Commission for Scotland (WICS) commissioned Oxera, in association with Keith Harris, independent adviser on water and Oxera Associate, to assess specific financial aspects of the regulatory approach that are designed to enable Scottish Water to raise finance efficiently and cost-effectively, so that the costs to consumers (in terms of the cost of capital) and taxpayers (in terms of the expected cost of any state involvement in a possible bankruptcy) are carefully balanced and internalised.

This note considers the determinants of a credit rating of a water and sewerage company (WASC), what may be the most appropriate credit metrics to target, and whether it is possible to find a ‘sweet spot’ that optimises the trade-off between the price and the availability of debt.

The rating of a water and sewerage business is fundamentally determined by three factors: the nature of the regulatory environment, the asset ownership model, and credit metrics. In looking to optimise Scottish Water’s debt-raising capacity, this indicates the importance of a stable and transparent regulatory regime coupled with strong and predictable cash flows. The basic rating created by these factors may be enhanced if the business is well-run, well-governed, focused on its core activities, and if further creditor protection is provided. Banks and credit rating agencies interviewed for this study stressed the importance of several non-financial aspects, particularly corporate governance, the independence of regulation, and the company’s goals and objectives together with its efficiency.

While investors would need reassurance on these operational, governance and ring-fencing provisions, and other non-financial aspects, in the event that Scottish Water raises finance in bond markets, the immediate priority at this stage would be to determine a clear set of

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'financial tramlines' that would be at the core of the next price control. The analysis of the work done by the rating agencies and of the covenants that companies have offered to the market would suggest that the two most important financial metrics are gearing and adjusted interest cover. These ratios carry the highest weight in the rating methodologies, and are the most commonly adopted in bond and bank documentation and contracts. Most interviewees were of the view that investors will look for those credit metrics that they are most accustomed to (with a preference for metrics that are investment- and cash-based rather than accounting standard-based), and that comparison of those metrics to corresponding ratios for water companies in England and Wales (E&W) would be unavoidable.

Typically, water companies have a group company 'family' credit rating between A/A2 and BBB+/Baa1, with the lower rating being most usual. This has allowed the companies to raise around two-thirds of their capital via debt if they are not ring-fenced, or around 80% if they are prepared to offer further creditor protections. Over the long term, companies raise finance at around 140 basis points (bp) above gilt yields with an A/A2 rating, and 190bp above gilt yields with a BBB+/Baa1 rating, implying that a credit rating 'notch' is worth around 15–20bp. However, this is a significant oversimplification. In practice, the debt premium (relative to gilts) that companies face has at least as much to do with the market conditions at the time of issuance as it has to do with the credit rating attributed to the bond issued. It is difficult to conclude that there is a particular sweet spot that optimises the balance between the price and the availability of debt capital. Nevertheless, it is the case that there is a positive relationship between companies' cost of borrowing and gearing level, and that the gap between A rated and BBB rated debt widens in stressed capital markets.

Based on established market practice, and as confirmed during the interviews, investors would not be surprised to see the central tramline for Scottish Water reflecting an A–/A3 credit rating, with the upper and lower limits being A/A2 and BBB+/Baa1. The level of debt that can be taken on for that rating does depend, however, on the strength of the regulatory system and the extent of additional creditor protections that are offered.

## 1.2 Introduction

This note addresses the following questions, in particular, that are relevant to WICS and to Scottish Water.

- 1) What characteristics of a typical regulated water utility's financing structure, including the maturity, cost, and credit rating of its bonds, can be used to inform target financial performance (referred to as the financial tramlines)?
- 2) What are the two most appropriate credit metrics to monitor a company's performance relative to the financial tramlines?
- 3) What steps could WICS be taking to assist Scottish Water in getting a credit rating consistent with these financial tramlines?
- 4) How does WICS ensure that the proposed framework is robust from the perspective of investors and credit rating agencies?

To answer these questions, it is necessary to give an overview of the main determinants of a company's credit rating. These are presented in section 2, both from a theoretical perspective and based on criteria used by credit rating agencies themselves.

Building from this, section 3 reviews market data and credit rating methodologies applied to the regulated water sector to inform the design of a financial tramline that would be applicable to Scottish Water, including the reliance on specific credit metrics. The section concludes with possible structural features and characteristics that could optimise the credit rating of an eventual bond issue by Scottish Water.

Lastly, section 4 summarises the views of three investment banks and three credit rating agencies interviewed by Oxera in January 2012 to test their views on the proposed financial tramlines.

## 2 What are the main determinants of a company's credit rating?

### 2.1 From a theoretical perspective

This section summarises the main factors identified in academic literature as having an impact on a company's cost of debt and credit rating. Corporate governance mechanisms—such as external monitoring, internal policies, stakeholders, and legal and institutional frameworks—are thought to lessen default risk (and thus to increase bond ratings and reduce the cost of debt) by:

- reducing information asymmetry between the company and its lenders, and thereby mitigating agency costs of debt (through more transparent and high-quality financial statements),<sup>1</sup>
- increasing the monitoring of the performance of the company's managers.

The main findings from the literature review (detailed in Appendix 1) point to the following factors as influencing a company's credit rating:

- the issuance of private debt—this is likely to reduce the perception of risk relative to the status quo, mainly due to closer monitoring from external, non-government, stakeholders;
- the company's corporate governance structure and the quality and transparency of its financial performance are likely to be key drivers of the perception of risk once private debt is issued.

### 2.2 From credit rating agencies' perspectives

Credit rating agencies apply their rating methodology according to generic and industry-specific criteria. The generic criteria that they consider in their analyses range from factors such as the nature of the product or service and the market, regulatory and political environment in which a company operates; to the financial structure and the strategy and competency of a company's management, board and investors.

Focusing more specifically on the water industry, a report by Moody's states that its rating criteria are based on four broad areas:<sup>2</sup>

- the regulatory environment and asset ownership model;
- credit metrics;
- operational characteristics and asset risk;
- the stability of the business and asset model.

These areas are sub-divided and assigned a weight according to their contribution to the overall rating (see Table 2.1).

<sup>1</sup> Ashbaugh-Skaife, H., Collins, D. and LaFond, R. (2006), 'The effects of corporate governance on firms' credit ratings', *Journal of Accounting and Economics*, **42**:1–2, pp. 203–43; Sengupta, P. (1998), 'Corporate Disclosure Quality and the Cost of Debt', *The Accounting Review*, **73**:4, pp. 459–74; Yu, F. (2005), 'Accounting transparency and the term structure of credit spreads', *Journal of Financial Economics*, **75**:1, pp. 53–84; and Elbannan, M. (2009), 'Quality of internal control over financial reporting, corporate governance and credit ratings', *International Journal of Disclosure and Governance*, **6**, pp. 127–49.

<sup>2</sup> Moody's (2009), 'Rating methodology – Global Regulated Water Utilities', December.

**Table 2.1 Factors affecting Moody's credit ratings for the water industry**

<b>Factors affecting Moody's credit rating</b>	<b>Weight (%)</b>	<b>Typical E&amp;W rating</b>
<b>The regulatory environment and asset ownership model</b>		
Stability and predictability of the regulatory environment	15.0	Aaa
Asset ownership model	10.0	Aa
Cost and investment recovery	12.0	A
Revenue risk	3.0	A
<b>Credit metrics</b>		
Adjusted interest cover	15.0	Baa to Ba
Gearing	15.0	Baa to Ba
Funds from operation/net debt	5.0	A to Baa
Retained cash flow to capital expenditure	5.0	B to Ba
<b>Operational characteristics and asset risk</b>		
Operational efficiency of the company	5.0	Baa
Scale and complexity of the capital programme and asset condition	5.0	A to Ba
<b>Stability of business and asset model</b>		
Ability and willingness to pursue opportunistic corporate merger and acquisition activity	3.3	Aa to A
Ability and willingness to increase leverage	3.3	A to Baa
Targeted proportion of unregulated profits	3.3	Aa

Source: Moody's (2009), 'Rating methodology – Global Regulated Water Utilities', December.

Together, the regulatory environment, asset ownership and credit metrics contribute to 80% of the final credit rating outcome. This underlines the importance of a stable and transparent regulatory regime, coupled with strong and predictable cash flows for a company to attain a strong credit rating. The basic rating created by this methodology may be enhanced if the business is well-run, well-governed, focused on its core activities and if further creditor protection is provided.<sup>3</sup>

A report by credit rating agency, Fitch, notes that the important credit ratios in rating WASCs are post-maintenance capital expenditure (CAPEX) cover ratio, net debt/regulatory asset value (RAV), and a dividend payout calculation.<sup>4</sup> There is a preference for forward-looking profiles than span the regulatory period, over historical data. Fitch also conducts its analysis annually, with a preference for thresholds to be met in each year of the regulatory period. It also considers other factors such as accessibility to debt and equity markets. (Fitch indicates a rating target of mid-to-low 'A' or higher 'BBB' for accessibility to debt markets.)

The methodology by ratings agency, Standard & Poor's (S&P) combines an assessment of business risk and financial risk.<sup>5</sup> There is no predetermined weighting for the categories and each company is rated in a holistic manner. S&P also indicates that the issuer credit rating of a wholly owned or substantially controlled utility subsidiary is linked to the credit quality of its

<sup>3</sup> The term 'creditor protection' is used, for example, in reference to companies that have adequate access to liquidity (possibly through a liquidity facility), and whose borrowings mature gradually over time.

<sup>4</sup> These credit metrics are defined in Appendix 2. Source: Fitch (2004), 'UK Water Sector— Topical questions answered', January 13th.

<sup>5</sup> Business risk includes country risk, industry risk, the competitive position, and profitability relative to peers. Financial risk includes credit metrics along with financial governance. See S&P (2009), 'Criteria Methodology: Business Risk/Financial Risk Matrix Expanded', May 27th.

parent, and that the degree of insulation is important.<sup>6</sup> The rating agency does not consider the regulatory ring-fence as being strong enough to prevent the parent company from undermining the credit quality of a subsidiary. Furthermore, S&P indicates that regulatory determinations at each price review are crucial in assessing the credit quality of water companies.<sup>7</sup> Some of the important financial ratios include funds from operations (FFO) interest coverage, FFO to average total debt, net cash flow to CAPEX, and the company's leverage (see Appendix 2 for a definition of these ratios).

There have been cases where ratings have been affected by that of the company's parent. For example, S&P reduced the credit rating of Wessex Water Services Limited immediately after the sale of the water company to Malaysian company, YTL, despite the previous owner, ENRON, having filed for protection from its creditors.<sup>8</sup> This reflected S&P's policy that a subsidiary cannot have a credit rating more than two notches above that of its parent. In the case of YTL, its indicative credit rating was determined by the relatively weak sovereign rating of Malaysia.

Another example comes from the Dutch energy sector: Gasunie is 100% government-owned by the Dutch state. S&P's rating positively reflects this implicit government support, in that it gives Gasunie an uplift of 3 notches, reflecting the expectations that the Dutch state would step in if Gasunie were in financial distress.<sup>9</sup>

There are also examples of government guarantees that are more explicit than in the case of Gasunie. This is the case for Network Rail, for which S&P attributes a credit rating that is identical to that of the UK due to an 'unconditional, unlimited, and irrevocable' financial indemnity provided by the Secretary of State for Transport. S&P explicitly states that the 'stable outlook on the notes reflects the outlook on the U.K. and will be revised with any changes to the outlook on the sovereign.'<sup>10</sup>

In general, rating agencies consider the WASCs in England and Wales to be relatively low risk because of:

- the essential nature of the service,
- the transparency and stability of the regulatory regime—in particular, the existence of the licence and the 25-year nature of the franchise.

Licence obligations also play an important role for investors in water companies in England and Wales. Investors consider the licence to be an effective moderating agent, both for possible government interference and for company behaviour. Moody's recognises that most regulated water companies own their assets under a licence regime, which is reflected in the high scores under the 'asset ownership model' category.<sup>11</sup> The way in which regulators implement their financing duty by targeting specific credit metrics—eg, Ofwat's target of A– or BBB+—has also provided investors with a clear and transparent framework within which to assess their investments.

## 2.3 Conclusions

This section sought to identify the determinants of credit ratings of companies, with particular focus on the water companies in England and Wales. The main points that emerge from a

<sup>6</sup> S&P (2010), 'Methodology: Differentiating the Issuer Credit Ratings of a Regulated Utility Subsidiary and its Parent', March 11th.

<sup>7</sup> S&P (2004), 'Peer Comparison: U.K. Water and Sewage Companies', November 24th.

<sup>8</sup> S&P (2002), 'Wessex Water 'BBB+' Ratings Affirmed and Removed From Watch Dev; Outlook Developing', June 14th.

<sup>9</sup> S&P (2011), 'Dutch Utility Gasunie SACP Revised To 'a-' On Likely Tariff Cuts; 'AA-/A-1+' Ratings Affirmed; Outlook Negative', September 26th.

<sup>10</sup> S&P (2011), 'Network Rail Infrastructure Finance PLC', August 5th.

<sup>11</sup> Moody's (2009), 'Rating methodology – Global Regulated Water Utilities', December.

review of empirical literature and credit rating agency methodologies can be summarised as follows.

The main factors that can improve a company's credit rating are:

- strong **corporate governance**, such as well-run and well-governed companies with sufficient external monitoring;
- **financial transparency and performance**, as evidenced by stable cash flows, low levels of gearing, and clear and concise financial statements;
- a stable and transparent **regulatory regime**;
- **structural enhancements**, such as ring-fencing and creditor protection;
- **implicit parent support**—in particular, ownership by a national government.

## 3 Implications for Scottish Water

### 3.1 Review of market data to determine a target financial tramline

This section analyses market data on generic corporate bond indices along with bond issuance data from the WASCs and some water-only companies (WOCs) in England and Wales. The empirical analysis takes a step in assessing evidence of the impact of credit rating on issuance yields and spreads. This would assist in identifying a sweet spot that Scottish Water might wish to target.

#### 3.1.1 Background

Since privatisation, water companies in England and Wales have increasingly accessed the debt markets. Initially, loans were made via the bank and leasing markets, but these have subsequently been extended to the bond market. The capital raised was used to finance the companies' investment programmes, optimise balance sheets and enhance equity returns. Over time, investors and managements have, at least implicitly, recognised that there is a trade-off between the amount of debt capital that can be obtained and its price. This leads to the issue of the optimal gearing ratio that water companies should target.

Traditionally, in determining price limits, regulators have sought not to prescribe the capital structure for companies to adopt; rather, they have signalled their views on the appropriate levels of gearing and financial strength necessary to obtain ready access to the capital markets.<sup>12</sup> When determining the target gearing level, regulators have been challenged to balance issues of intergenerational equity, the ability of companies to absorb shocks, and short-term political necessity to manage bills.

Regulators have usually not assumed that companies will adopt structural enhancements to improve credit ratings for a given set of credit metrics or access more capital for any given price. These include structural ring-fencing (ie, the separation of the company's regulated activities from the rest of the group) and creditor protection (eg, additional information and rights given to bondholders/creditors, including the ability to limit dividends when certain events are triggered).

In the E&W water industry, the building-block approach to allowed revenue implies that customers have paid for the annual cost of operation, asset maintenance, tax and return to

<sup>12</sup> See Ofwat (2009), 'Future water and sewerage charges 2010-15: final determinations', chapter 5.

investors (ie, the cost of capital earned on the outstanding asset base). On average, E&W WASCs operate with a capital structure composed of 65–70% debt.<sup>13</sup> All else equal, this seems to equate to a credit rating in the range of A–/A3 to BBB+/Baa1, as shown in Table 3.1. Companies that have chosen to offer enhanced creditor protections are typically able to access more debt for any given credit rating, as illustrated by the gearing ratios averaging 76% for the five ring-fenced companies, or 79% if Welsh Water is excluded. (Welsh Water differs in its ownership structure—ie, it is a not-for-profit company).<sup>14</sup>

**Table 3.1 ‘Family’ credit rating of E&W WASCs**

Company name	S&P	Moody’s	Fitch	Ring-fencing
Anglian Water <sup>1</sup>	A– <sup>4</sup>	Baa1	A–	Yes
Dwr Cymru (Welsh Water) <sup>1</sup>	A <sup>4</sup>	A3	A–	Yes
Northumbrian Water <sup>2</sup>	BBB+	Baa1	BBB+	No <sup>2</sup>
Severn Trent Water	BBB+	A3	NR	No
South East Water	BBB <sup>4</sup>	Baa2	NR	No
South Staffordshire Water	BBB+	Baa2	NR	No
South West Water	NR	NR	NR	No
Southern Water <sup>1</sup>	A– <sup>4</sup>	Baa2	NR	Yes
Thames Water <sup>1</sup>	A– <sup>4</sup>	Baa1	NR	Yes
Three Valleys Water	BBB+	A3	NR	No
United Utilities Water	BBB+	A3	BBB+	No
Wessex Water	BBB+	A3	A–	No
Yorkshire Water <sup>1, 3</sup>	A– <sup>4</sup>	Baa1	NR	Yes

Notes: <sup>1</sup> Company structure offering additional creditor protection, involving two tranches of debt and ring-fencing arrangements. <sup>2</sup> Northumbrian Water became ring-fenced following its acquisition by Cheung Kong Infrastructure, which closed in October 2011. <sup>3</sup> Yorkshire Water’s parent (Kelda Group) is not rated by S&P and rated Aa3 by Moody’s according to Dealogic. <sup>4</sup> Rating of corporate securitisations, not the issuing companies.

Sources: Moody’s (2011), ‘UK Water Sector Outlook 2011’, October 10th. S&P (2011), ‘Regulatory Risk For Water Companies In England And Wales’, November 15th. Fitch ratings are from Dealogic DCM.

### 3.1.2 What is the relationship between the cost and availability of debt?

This section analyses the relationship between the cost of debt and the credit rating for the WASCs and the market more generally over the past two decades. The dataset comprises bonds issued by non-financial corporates, denominated in GBP, as well as bonds issued specifically by E&W water companies (see Table A1.1 in Appendix 1).

As shown in Figures 3.1 and 3.2 below, the cost of debt varies significantly over time, in both absolute terms (eg, as indicated by the spreads on corporate bonds) and relative terms (eg, the spread differential between A and BBB rated bonds).

- The level of spread for a particular credit rating—characterised by a median of 140bp and 190bp between 1998 and 2011 for A and BBB rated corporate bonds,

<sup>13</sup> Moody’s (2011), ‘2011 Water Industry Outlook’, p. 20, exhibit 13.

<sup>14</sup> S&P states that the ‘nonprofit ownership structure of Glas Cymru, with its lack of shareholders, eliminates pressure to leverage the balance sheet through shareholder distributions’. See S&P (2011), ‘Transaction Update: Dwr Cymru (Financing) Ltd’, September.

respectively—ranged from as low as 85bp and 125bp in 2005 to as high as 370bp and 500bp in 2009 for A and BBB rated corporate bonds respectively.<sup>15</sup>

- Furthermore, current spreads are approximately 100bp and 120bp higher than during the pre-crisis period for A and BBB bonds, respectively, reflecting the increased stress in financial markets combined with the substantial decline in gilt yields over recent months.<sup>16</sup>
- The relative pricing between different credit ratings also fluctuates over time. On average since 1998, A rated bonds were priced to yield approximately 50bp less than bonds rated BBB. This indicates that, for every notch downgrade between A and BBB, a company can expect to pay an additional 17bp. The spread differential does widen at times of stress in the capital markets—for example, during the recent financial crisis, the relative pricing more than doubled, with BBB bonds priced at around 135bp higher than A rated bonds, indicating a value of 45bp for each credit rating notch during stressed market conditions (based on average spreads during 2009).<sup>17</sup>
- It is also informative to compare the current levels to the pre-crisis levels. Currently, A rated bonds are priced at a discount of around 60bp relative to BBB bonds (based on 2011 average). This compares with around 40bp over the pre-crisis period (ie, between 1998 and 2007), implying that the current value of a credit rating ‘notch’, 20bp, is more than 5bp higher than in a ‘normal’, pre-crisis period.<sup>18</sup>

Thus, while the cost of a bond depends on its credit rating, it is also highly affected by market conditions at the time of issue. Importantly, these findings also show that bonds with a higher credit rating are less exposed to market fluctuations over time, perhaps as a reflection that investors place an even greater premium on credit quality during times of market turmoil.

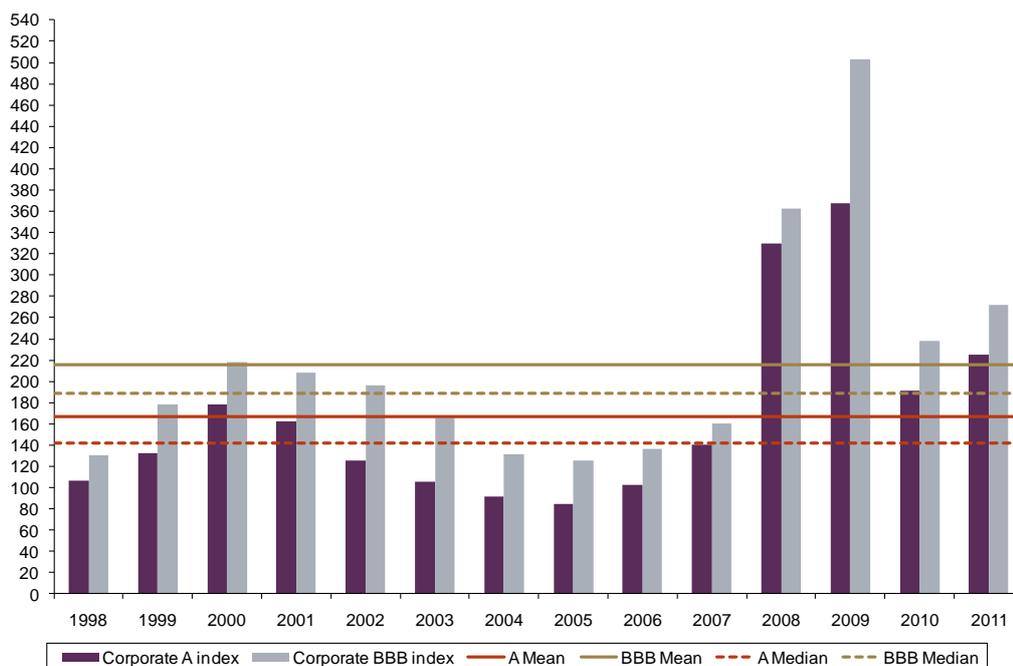
<sup>15</sup> The average over the same period was 25bp higher—ie, 165bp and 215bp for A and BBB rated corporate bonds respectively. Source: Datastream and Oxera analysis.

<sup>16</sup> Spreads on A (BBB) bonds averaged around 125bp (165bp) between 1998 and 2007, compared with 225bp (285 bp) during 2011.

<sup>17</sup> The 45bp ‘crisis’ premium for a credit rating notch is obtained by dividing the average spread differential between A and BBB rated bonds (ie, 135bp) by the number of notches between A and BBB (ie, three).

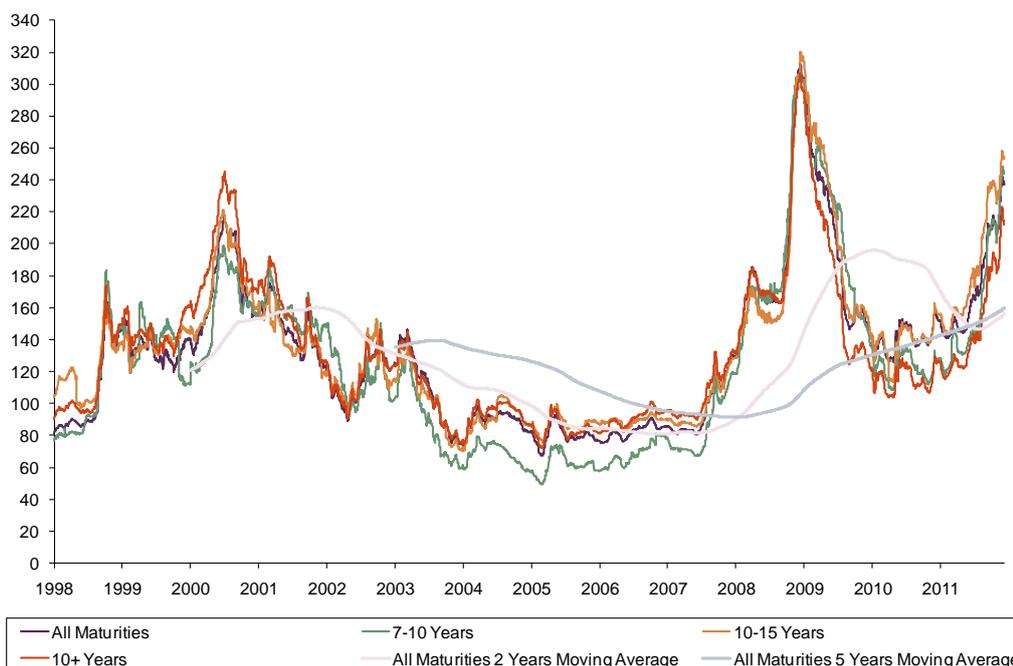
<sup>18</sup> The current notch premium is based on the current spread differential between A and BBB (ie, 60bp) divided by three notches. This is 7bp higher than the pre-crisis period (ie, 40bp divided by three).

**Figure 3.1 Spread of A and BBB rated corporate bonds (bp)**



Note: Corporate A index and Corporate BBB index are the arithmetic averages of spreads of the iBoxx Corporate Bond A and BBB indices (All Maturities) relative to the iBoxx Gilts index (All Maturities) for each year.  
 Source: Datastream and Oxera calculations.

**Figure 3.2 Spread of sterling-denominated corporate bonds issued by utilities (spread, bp)**



Note: Spreads of the iBoxx Utilities indices for different maturities (all maturities, 7–10 years, 10–15 years and 10+ years) relative to the iBoxx Gilts indices with matching maturities.  
 Source: Datastream and Oxera calculations.

A similar volatility in yields and spreads can be observed from data on the issuance price for bonds issued by the E&W water companies (Figure 3.3), where two separate periods of declining yields can be observed, separated by a considerable increase in issuance spreads

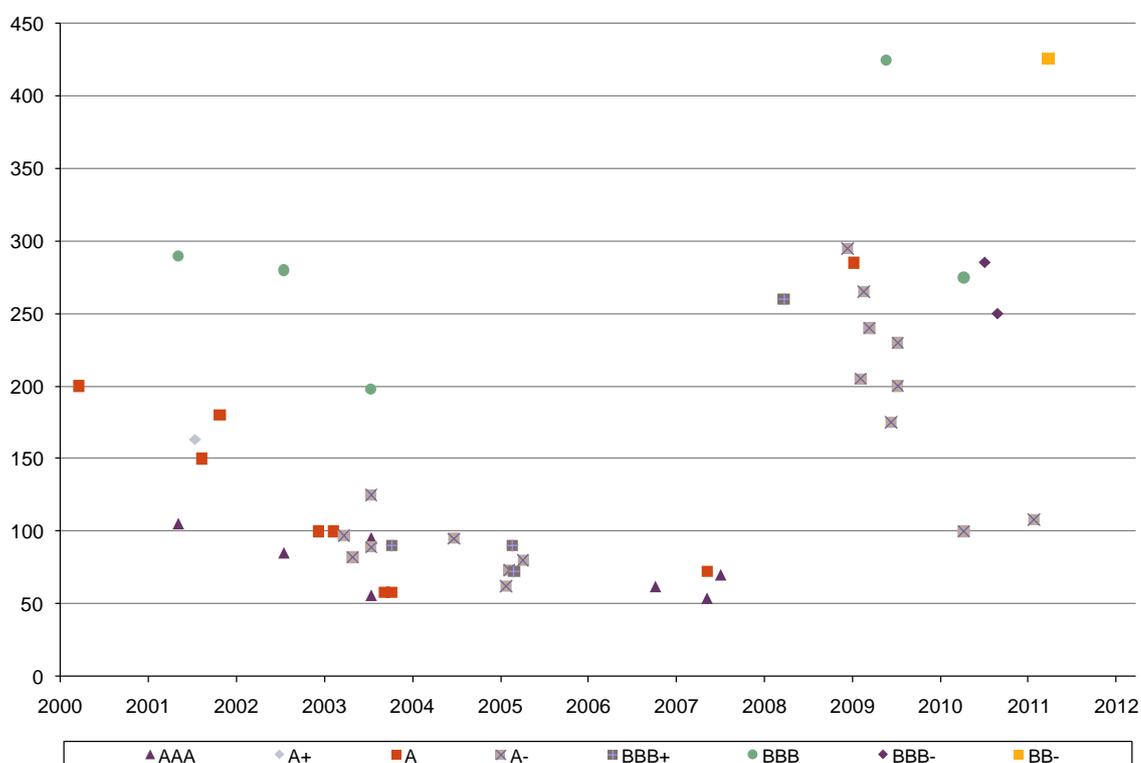
following the recent financial crisis. Using this data, the average value of a notch on the credit rating scale can be estimated. The main results are that bonds rated:<sup>19</sup>

- A/A2 were priced at a 125bp premium to gilts (based on 13 issues);
- A-/A3 were priced at a 143bp premium to gilts (based on 18 issues);
- BBB+/Baa1 were priced at a 129bp premium to gilts (based on five issues).

At first glance, the resulting issuance spread for the BBB+ bonds appears counterintuitive, as it is lower than better-rated A- and A bonds. In fact, the issuance spread for BBB+ bonds is considerably out of line with the secondary spreads on BBB bonds in 'normal' times, which averaged around 165bp between 1998 and 2007. This is not the case for A and A- bonds, however, suggesting that the BBB+ average issuance spread may have been biased downwards by outliers (the average is based on only five issuances during the sample period).<sup>20</sup>

Hence, the differential in issuance spreads between A and A- rated bonds issued by E&W water companies suggests that, over the long term, an additional 'notch' of credit rating may be worth approximately 15–20bp to a WASC. This is consistent with the findings from market trading spreads reported above.

**Figure 3.3 Issuance spreads of E&W water utility bonds (bp)**



Source: Dealogic and Oxera calculations.

<sup>19</sup> These results are issuances of fixed coupon, sterling-denominated bonds issued between 2000 and 2011 by E&W water companies.

<sup>20</sup> The issuance spreads for A and A- rated bonds issued by E&W water companies, which averaged 125bp and 143bp respectively, are broadly consistent with the pre-crisis average of secondary yields on the A rated corporate bond index, which averaged 123bp between 1998 and 2007 for a combination of A+, A and A- ratings.

In summary, the data reviewed in this section indicates the following additional cost for each notch of credit rating:

- around 15–20bp in ‘average’ (or normal) market conditions, based on both secondary market trading spreads and on primary issuances by water companies;
- around 20bp in current market conditions, and as much as 45bp during periods of market turmoil, as indicated by trading spreads in secondary markets.

### 3.1.3 What credit rating should be targeted?

As observed in section 2.2, the regulatory framework and companies’ credit metrics play a significant role in determining the credit rating of a water utility. Hence, the ratings of WASCs in the range A3/A– to Baa1/BBB+ reflect both the regulators’ interpretation of their financing duties and how this was incorporated into the regulatory framework, and the companies’ commitment to finance themselves efficiently, given the constraints and incentives imposed by the regulatory regime.

Section 3.1.2 demonstrated that credit ratings are only one aspect in determining the price of debt. Market conditions are equally, if not more, important, and creditor protections also play a role in accessing more capital for any given price. The evidence on price alone therefore does not present a compelling case to move away from targeting the general water company rating of a weak single A/strong BBB rating.

In principle, it would be possible to move away from this target by increasing the debt to equity ratio above that assumed in price limits. This may help to reduce the pressure on equity and/or customers and reduce the tax burden. However, there may be other intangible costs associated with higher debt levels (eg, a lower capacity for absorbing shocks), and therefore the net benefits of any increase in gearing need to be carefully assessed.

### 3.1.4 Implications for the financing of Scottish Water

This section has examined market data with the aim of establishing a connection between the cost and availability of debt. The ‘family’ credit rating of E&W water companies lies somewhere in between A and BBB, with BBB+ being most usual.

The main factors contributing to the cost of debt are credit ratings, market conditions at the time of issuance, and structural features such as ring-fencing and creditor protections. Although it is difficult to find a particular sweet spot that optimises the balance between the price and availability of debt capital, the analysis concludes that the price rises as more debt is taken on, and that the gap between an A and a BBB rated bond widens in stressed capital markets.

The credit metrics of Scottish Water would currently indicate a credit rating of approximately A/A2.<sup>21</sup> Based on the yield on recent issuances by E&W water companies rated A/A2 (125bp, as detailed in section 3.1.2), and allowing for a 10bp range above and below (ie, half of the notch premium), this would suggest that Scottish Water could borrow from the capital markets at a premium of around 115–135bp relative to gilts in normal market conditions. However, given the current stressed market conditions, a premium of approximately 100bp would be expected,<sup>22</sup> resulting in a cost of borrowing of around 215–245bp above gilts.<sup>23</sup>

<sup>21</sup> This is on the basis of Scottish Water’s gearing ratio (53% in 2011) and its interest coverage ratio (1.6 to 3.4 in 2010, depending on how CAPEX is treated). Both ratios are within Moody’s thresholds for A2 rating and are 1.8–2.5x for the adjusted interest coverage ratio and 50–60% for gearing (see Table 3.3 below).

<sup>22</sup> Based on an average for A rated corporate bonds of around 220bp in 2011, relative to a pre-crisis average of approximately 120bp.

<sup>23</sup> The range is widened slightly to reflect the increased volatility that characterises the current debt market conditions.

Additionally, with appropriate ring-fencing, and subject to investors and credit rating agencies taking a view that shocks can be absorbed and innovation not impaired, it might be possible to increase gearing to around 80%.<sup>24</sup> Considering that gearing for Scottish Water was 53% as at March 2011,<sup>25</sup> and assuming that the increased credit provisions would offset the increase in gearing so that the overall credit rating remains at A/A2, an additional £1.4 billion could be raised at a cost of gilts plus 115–135bp in a normal market or gilts plus 215–245bp in today's market.

The understanding is that Scottish Water is looking to establish financial tramlines wherein the upper/lower limit would be one notch above/below the central credit rating. Based on the current financial strength and peer-group comparison, the analysis conducted directs that investors would expect the central tramline for Scottish Water to be commensurate with an A– credit rating, with the upper and lower limits being A and BBB+ respectively. This reflects established market practice, and there is no compelling price reason to move from this position. However, in order to improve the availability of debt, Scottish Water may offer enhanced creditor protections. Additionally, the regulatory regime may need to be strengthened to appeal to investors and credit rating agencies alike.

## 3.2 What credit metrics to use?

### 3.2.1 Two key credit metrics Scottish Water may target

Traditionally, WICS has adopted an RCV-based model in determining price limits, although from discussion with WICS, Oxera understands that there could be a possibility of it moving away from this approach. Furthermore, WICS may allow Scottish Water to access debt markets, although access to equity markets will most likely be restricted. In order to ensure that the company can efficiently finance its functions, the regulator may be expected to give considerable importance to capital market metrics. As a result, it is understood that WICS is proposing that price controls be set with reference to specific credit metrics. More specifically, regulated revenues are expected to cover:

- efficiently incurred operating cost;
- efficiently incurred maintenance expenditure;
- tax;
- debt costs that reflect the optimal balance between the price and availability of capital.

In its Final Determination document, WICS has proposed levels for key financial ratios, as shown in Table 3.2.

<sup>24</sup> Based on the 2011 gearing level for Anglian Water, as reported by Moody's in its 2011 Water Industry Outlook, exhibit 13.

<sup>25</sup> Based on net debt of £2,867 and a value for regulated assets of £5,388 as at March 2011. See Scottish Water (2011), Annual accounts, pp. 16 and 44.

**Table 3.2 Assumed range of financial ratios for Scottish Water**

Financial ratio	Average assumed value	Norm for investment grade	WICS's intention to maintain
FFO/debt	12.5%	Around 13.0%	11–13%
RCF/debt	12.5%	Around 8.0%	11–13%
Cash interest cover	3.4	Around 3.0	Greater than 3
Cash interest cover I (capital charges: adjusted)	1.6	Around 1.6	1.5–2.0
Cash interest cover II (actual capital maintenance expenditure)	2.1	Around 2.0	2.0–2.5

Source: Water Industry Commission for Scotland (2009), 'The Strategic Review of Charges 2010-15: The Final Determination', November.

Table 3.3 compares Moody's thresholds for the credit metrics for water companies with the actual ratios of E&W water companies rated between A2 and Baa2. Keeping in mind that the final credit rating is based on several factors, which include credit metrics but also business risk and regulatory regime (see section 2.2), these may still provide a high-level indication of the possible credit rating if Scottish Water were to issue private debt.

**Table 3.3 Credit metrics used by Moody's**

Moody's rating	Adjusted interest cover (37.5% weight) <sup>1</sup>	Net debt/ regulatory asset base (RAB) (37.5% weight) <sup>1</sup>	FFO/net debt (12.5% weight) <sup>1</sup>	RCF/CAPEX (12.5% weight) <sup>1</sup>
<b>A2 rating</b>				
Indicative threshold	1.8–2.5x	50–60%	n/a	10–14x
Actual mean	n/a	n/a	n/a	n/a
<b>A3 rating</b>				
Indicative threshold	1.6–1.8x	60–68%	n/a	8–10x
Actual mean	1.9x	64.4%	14.5%	1.0x
<b>Baa1 rating</b>				
Indicative threshold	1.4–1.6x	68–75%	n/a	6–8x
Actual mean	1.9x	70.6%	13.2%	1.0x
<b>Baa2 rating</b>				
Indicative threshold	1.2–1.4x	75–85%	n/a	4–6x
Actual mean	1.6x	79.0%	12.5%	0.6x

Notes: Each credit metric is as defined in Appendix A1.2. No company was rated A2 by Moody's in 2011. Companies included in the mean of A3 rated bonds are Severn Trent Water Ltd, United Utilities Ltd, Veolia Water Central Ltd, Wessex Water Services Ltd, and Welsh Water. Companies included in the mean of Baa1 rated bonds are Anglian Water Services Ltd, Northumbrian Water Ltd, Severn Trent plc, Sutton & East Surrey Water plc, Thames Water Utilities Ltd, United Utilities plc, and Yorkshire Water Services Ltd. Companies included in the mean of Baa2 rated bonds are Southern Water Services Ltd, South East Water Ltd, and South Staffordshire Water plc. <sup>1</sup>The weights denote the relative importance of each credit metric within Moody's 'credit metrics' rating category, which represents 40% of the total factors considered by Moody's when setting credit ratings (as detailed in Table 2.1).

Source: 'Indicative threshold' is sourced from previous discussions with Moody's and should be interpreted as a high-level guide only, as it may not reflect Moody's current thresholds; 'Actual mean' sourced from Moody's (2011), 'UK Water Sector Outlook 2011', October 10th.

A peer comparison of key financial ratios used by S&P in its analyses is summarised in Table 3.4. Based on S&P's indicative ratios for corporates,<sup>26</sup> an FFO/debt ratio of less than 12% and a debt/capital ratio of more than 60% correspond to a 'highly leveraged' company (in general, this corresponds to a rating of BB or below). However, in the case of Thames Water, which, according to these two ratios, would classify as a 'highly levered' company, S&P's rating of A– implies that other factors (in particular, the business risk profile) also play an important role in the rating decision.

**Table 3.4 Peer comparison of credit metrics from S&P**

Adjusted ratios	Thames Water Utilities Ltd	Anglian Water Services Financing plc	Southern Water Services Ltd	South East Water (Finance) Ltd
EBIT interest coverage (x)	2.4	1.8	2.2	3.1
FFO interest coverage (x)	2.8	2.1	2.5	3.8
FFO/debt (%)	10.2	7.1	8.8	10.4
Discretionary cash flow/debt (%)	(6.9)	(0.9)	1.7	(0.3)
Net cash flow/CAPEX (%)	34.7	86.6	133.5	115.9
Total debt/debt plus equity (%)	78.0	75.6	80.0	87.0
Return on common equity (%)	20.9	23.6	16.5	23.1
Common dividend payout ratio (unadjusted) (%)	141.5	81.4	58.7	48.4

Source: S&P (2011), 'Global Credit Portal: Thames Water Utilities Cayman Finance Ltd', January 26th.

Importantly, these credit metrics have also been used by companies as part of the covenants they offer when raising capital and determining financial structures. In this context, emphasis has been placed on gearing and adjusted interest cover.

As WICS sets the price control and assesses the financial strength of Scottish Water, two credit metrics—gearing and adjusted interest cover—may be considered. However, there should be some flexibility in this practice as rating agencies are likely to have to change some of their calculations and definitions—for example, by moving towards a cash or total expenditure (TOTEX) definition of capital maintenance charges post-2015. Ultimately, whether and how the rating agencies' definitions for these ratios will change depends on a range of factors, including the speed at which changes in regulatory regimes evolve from proposals to final decisions.

Combined with the target credit metrics, Scottish Water would be free to operate within financial tramlines as defined earlier.<sup>27</sup> If it moves outside these tramlines then either the outperformance could be shared with customers, or prices could be readjusted to allow access to capital markets again on reasonable terms. These tramlines may be important as they give, or may even enhance, many of the key creditor protections that securitisation structures have put in place. In the past, credit rating agencies have viewed such protective structural features as positive. For example, according to S&P, Thames Water's high gearing ratio has been offset by the liquidity support provided through dedicated working capital, CAPEX and debt service reserve facilities.<sup>28</sup> S&P also recognises the benefit of Ofwat's interim determination of K (IDoK) mechanism 'which allows companies to reapply for a

<sup>26</sup> S&P (2009), 'Criteria Methodology: Business Risk/Financial Risk Matrix Expanded', May 27th.

<sup>27</sup> This may be flexed to reflect any cash or gilts reserve to which Scottish Water has access.

<sup>28</sup> S&P (2011), 'Global Credit Portal: Thames Water Utilities Cayman Finance Ltd', January 26th.

revenue increase in the middle of a price control if its performance is affected by unexpected changes'.<sup>29</sup>

### 3.2.2 Conclusions

The analysis of the work done by the rating agencies and of the covenants that companies have offered to the market would suggest that the two most important financial metrics are gearing and adjusted interest cover. These ratios carry the highest weight in the rating methodologies and are the most commonly adopted in bond and bank documentation and contracts.

## 3.3 What steps can WICS and Scottish Water take?

The steps that WICS may take in order to help Scottish Water optimally access capital markets can be broken down into the following.

- a) Create a long-term licence or a contract which:
  - clearly sets out the functions of the company and the regulator;
  - ensures that Scottish Water can finance its functions;
  - ring-fences Scottish Water such that it focuses purely on its water and sewerage activities.
- b) Set out clearly how the regulator interprets its duties—in particular:
  - the regulatory methodology that WICS intends to adopt;
  - the financial strength that the company and regulator intend to target (ie, the financial tramlines);
  - the actions that would be taken should the company approach and ultimately breach these proposed financial tramlines.
- c) Demonstrate regulatory consistency with transparent regulatory methodology and consistent regulatory action.

In addition to benefiting from a supportive and transparent regulatory framework, Scottish Water may enhance its credit rating and thereby reduce its cost of debt by embedding protective structural features designed to protect debt-holders and enhance cash-flow certainty. These may include cash reserves and liquidity facilities, ring-fencing, protection of senior debt from junior debt, and a strong overall covenant package. In addition, Scottish Water could further improve its credit profile and mitigate refinancing risk by issuing bonds with staggered maturities, including longer-dated bonds.

## 4 Field testing of the proposed regulatory framework

WICS's proposed regulatory framework was tested through interviews with three rating agencies and three investment banks in January. The interviews sought the reaction of market participants to the proposals put forward by WICS, in particular to determine whether these proposals would facilitate ready and competitive access to the capital markets for Scottish Water.

Broadly, the proposals were welcomed. Interviewees could see how the financial tramline approach reduced uncertainty and improved legitimacy. However, there were concerns about how governance, the independence of regulation, the goals and objectives of the company,

<sup>29</sup> S&P (2011), 'Global Credit Portal: Transaction Update: Dwr Cymru (Financing) Ltd', June.

and the company's efficiency would be managed. Moreover, interviewees stressed that credit metrics were only one part of the picture.

On the independence of regulation, there was some nervousness about the ongoing political risk in Scotland, particularly in light of continued state ownership of Scottish Water. In general, interviewees pointed out that ring-fencing Scottish Water and WICS from political interference would give investors regulatory stability. As a result, it was considered important to have an independent regulator working within a clear legal framework and under transparent and consistent rules. Furthermore, it would be helpful if Scottish Water mirrored the ring-fencing in covenants to any bond offering giving bondholders explicit certainty.

The issue of which credit metrics to use was explored at length. The key message from the interviews was that, while it is possible to argue the case for almost any metric, moving away from those most commonly used by rating agencies and in financial covenants will worry investors. Investors are used to certain metrics and would inevitably compare Scottish bonds, their structures and their covenant with those of their English and Welsh counterparts. Differences will raise questions and doubts leading to a higher premium, all else being equal. Overall, there was a preference to use adjusted interest cover and gearing (net debt to RCV) as the two credit metrics. More generally, preference was for metrics that are investment- and cash-based rather than accounting standard-based.

When asked for the comparison of financial tramlines and the RCV approach, it was accepted that, rightly or wrongly, RCV is considered by investors as the key building block in the financing of the water industry. When pushed beyond the reason of investor comfort, investment banks said that the RCV approach enables bond investors to see the value of the assets explicitly and, more importantly, the companies' ability to shelter from shocks. Lastly, it should be noted that one agency went further to say that if the RCV did not exist, the perception of credit quality could drop, all else equal. In conclusion, all interviewees questioned why a regulator would want to move away from the current regulatory framework of Ofwat, which is well accepted by both rating agencies and investors.

There was concern from all interviewees that the use of tramlines might impair management incentives. In particular, management might not be disciplined to avoid deterioration in credit quality if there were an explicit regulatory 'bail-out plan'. They might prefer leading a quiet life to focusing on outperformance and innovation. This might lead to Scottish Water becoming inefficient, reducing legitimacy in the eyes of both the bond investors and the customers. A solution to this could be to set trigger levels between the lower tramline and the midpoint, at which point the management would be required to submit formal and binding rectification plans. Interviewees saw this as akin to bondholder step-in rights.

Moving on to the specific target levels, interviewees considered that a target rating of A-/A3 is consistent with that for the water companies in England and Wales. This would leave tramlines at A/A2 at the upper level and BBB+/Baa1 at the lower level. Interviewees did not consider that achieving these levels might require ring-fencing equivalent to that offered by the 'whole-business securitisations' in England and Wales.

## A1 Literature review

It has been shown that firms that face stronger external monitoring in the form of higher institutional ownership and stronger outside control of the board (as measured by the percentage of board directors who are not officers of the firm) tend to have lower yields and better bond ratings.<sup>30</sup> The same conclusion holds for overall board independence and board expertise, whereas greater power for the Chief Executive Officer on the board was shown to have adverse effects on the credit rating.<sup>31</sup>

All else equal, firms rated favourably by financial analysts for the degree of detail, timeliness and clarity of disclosures are perceived to have a lower default risk, and are rewarded with a lower cost of borrowing.<sup>32</sup>

Financial performance (often summarised using credit metrics) also plays an important role in determining a firm's cost of debt. Empirical studies show that financial information—such as bond ratings, total assets, solvency ratio, equity/debt ratio, or the common stock systematic risk measure—explains a significant amount of a company's credit spread.<sup>33</sup>

Another area of research focuses on the institutional and legal environment in which a company operates: companies operating in a transparent information environment, for example with better legal institutions to protect bondholders, bear a lower cost of debt.<sup>34</sup>

<sup>30</sup> Bhojraj, S. and Sengupta, P. (2003), 'The Effect of Corporate Governance Mechanisms on Bond Ratings and Yields: The Role of Institutional Investors and Outside Directors', *The Journal of Business*, **76**:3, pp. 455–75.

<sup>31</sup> Ashbaugh-Skaife, H., Collins, D. and LaFond, R. (2006), 'The effects of corporate governance on firms' credit ratings', *Journal of Accounting and Economics*, **42**:1–2, pp. 203–43.

<sup>32</sup> Sengupta, P. (1998), 'Corporate Disclosure Quality and the Cost of Debt', *The Accounting Review*, **73**:4, pp. 459–74.

<sup>33</sup> Elton, E., Gruber, M., Agrawal, D. and Mann, C. (2001), 'Explaining the Rate Spread on Corporate Bonds', *The Journal of Finance*, **56**:1, pp. 247–77; Fisher, L. (1959), 'Determinants of Risk Premiums on Corporate Bonds', *Journal of Political Economy*, **67**:3, pp. 217–37; Kaplan, R. and Urwitz, G. (1979), 'Statistical Models of Bond Ratings: A Methodological Inquiry', *The Journal of Business*, **52**:2, pp. 231–61 and Reiter, S. and Ziebart, D. (1991), 'Bond Yields, Ratings, and Financial Information: Evidence from Public Utility Issues', *Financial Review*, **26**:1, pp. 54–73.

<sup>34</sup> Haw, I., Ho, S., Hu, B., and Zhang, F. (2008), 'Industry Concentration, Information Quality, and the Cost of Debt: Evidence from East Asia'.

## A2 Empirical analysis

### A2.1 Summary of dataset

**Table A2.1 Summary of data from recent issuances by E&W water companies**

	Index-linked	Fixed coupon
<b>Total sample</b>	44	56
<b>Average years to maturity</b>	41 years	22 years
<b>Credit rating</b>		
AAA	4	8
AA+	0	0
AA	0	0
AA-	0	0
A+	3	4
A	6	13
A-	18	18
BBB+	11	5
BBB	2	5
BBB-	0	2
BB+	0	0
BB	0	0
BB-	0	1

### A2.2 Definition of credit metrics used by Moody's

Moody's defines the main credit metrics as follow.<sup>35</sup>

- Adjusted interest cover: given by  $(\text{FFO} + (\text{net interest expense} - \text{non-cash interest}) - \text{capital charges}) / (\text{net interest expense} - \text{non-cash interest})$ . FFO reflects cash flows from operations excluding working capital movements.
- Net debt to RAB: the denominator for this ratio can be the RAB or a similar concept if regulatory financial statements are used for the analysis, or it can be based on total fixed assets if statutory financial statements are used.
- FFO to net debt: a measure of dynamic leverage. Defined as  $\text{FFO} / \text{net debt}$ , this ratio can be used as an indicator of a company's ability to generate cash flows if monitored over a period of time.
- RCF to CAPEX: this is given by  $(\text{FFO} - \text{dividends paid}) / \text{CAPEX}$ . It is a measure of the extent to which a water utility is able to fund its CAPEX internally. The ratio deducts the dividend payments from the FFO because only retained profits matter for internal funding.

<sup>35</sup> Moody's (2009), 'Global Regulated Water Utilities', pp. 19–22.