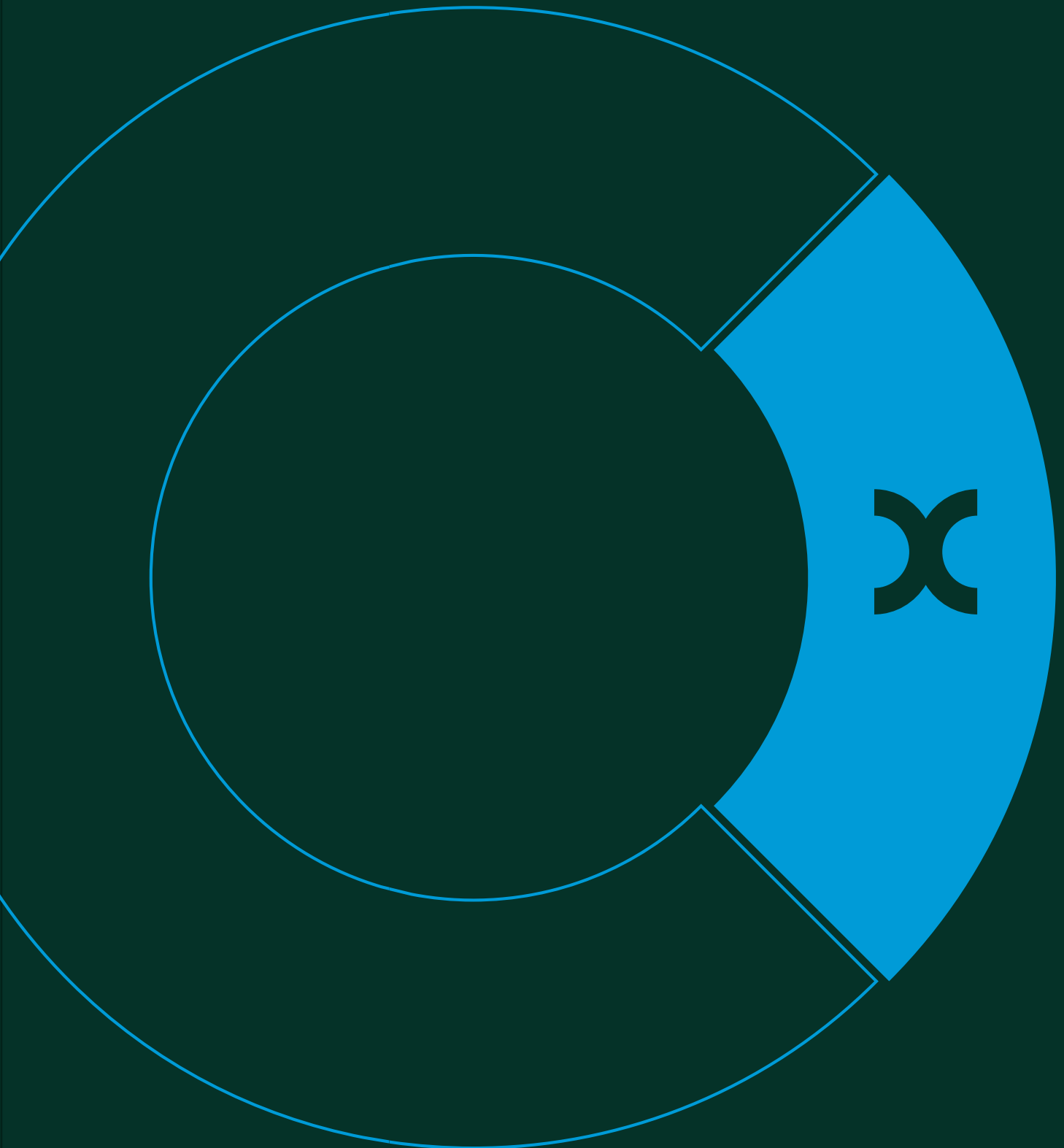


PR24 company-specific adjustment to allowed
cost of debt

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Prepared for South Staffs Water

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Executive summary

On behalf of South Staffs Water, in this report we assess the appropriate value for the company-specific adjustment to the allowed cost of debt for AMP8. This includes a quantitative assessment of the small company premium (SCP) for the cost of embedded debt and an application of Ofgem's RIIO-2 analysis of the premium for infrequent issuance and the cost of managing the RPI-CPIH transition.

Ofwat's analysis of 2021/22 data shows that debt financing costs of small water-only companies (WOCs) are 0.58–1.48% higher than those of water and sewerage companies (WASCs) and large WOCs.¹ Given that Ofwat sets its cost of embedded debt allowance based on the debt financing costs of WASCs and large WOCs (according to the balance sheet approach), it would be consistent to use the 0.58–1.48% estimate as a company-specific adjustment on the cost of embedded debt to enable small WOCs to recover their costs in the same way as the rest of the industry does. However, historically and in PR24, Ofwat has been following a different approach to setting a company-specific adjustment: it estimates an SCP based on small WOCs' debt instruments' yields at issuance.

In particular, in the PR24 Final Methodology, Ofwat has relied on its own and the UK Competition and Markets Authority's (CMA) PR19 precedent to indicate an 'early view' that an SCP of 0.30% is appropriate for the notional small WOC.

We have used 2021/22 data on water companies' active debt instruments and a methodology conceptually consistent with the one that was used by Ofwat and the CMA in PR14 and PR19 to provide an up-to-date estimate of an SCP. We have concluded that an **SCP of 0.55%** is supported by the evidence. This is close to the bottom end of the 0.58–1.48% range that is mentioned above—i.e. the range indicating how much higher the actual cost of embedded debt is for small WOCs than for WASCs and large WOCs.

To come to this conclusion, we have assessed three types of small WOCs' debt: bonds (including private placements), Artesian debt, and floating-rate bank facilities. For the bonds and Artesian debt, we undertake the comparison of small WOCs with WASCs and large WOCs following two complementary approaches:

- by comparing the yields of the instruments issued by small WOCs with the yields of the instruments issued by large companies around the same time;
- by estimating the difference in yields between the instruments and the benchmark index.

¹ The range is based on the median estimates under the average of Ofwat's 'Actual-notional' and 'All-in' approaches (used by Ofwat) and just the 'All-in' approach (considered more appropriate by Oxera in this context). Oxera calculation based on Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, Table 4.3, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

For the bank facilities, we compare small WOCs' facilities' margins over SONIA with those of WASCs and large WOCs issued around the same time.²

We use the evidence of the acquired small WOCs alongside the evidence of those that are still independent, which gives us a sample of 18 instruments from seven companies.

In addition to assessing the SCP for the cost of embedded debt, we consider how Ofgem's RIIO-2 analysis of the infrequent issuer premium to the cost of new debt could apply to PR24. We observe that small WOCs are sufficiently small to be eligible for an allowance equivalent to that of Ofgem's RIIO-2 infrequent issuer premium, which in RIIO-2 was estimated to be **0.26%** for the cost of new debt.

The 0.26% premium would be applied to the cost of new debt, whereas the 0.55% premium identified above would be added to the cost of embedded debt.

Finally, we have considered Ofgem's allowance for the costs of managing the RPI-CPIH transition. We estimate that the value of Ofgem's RPI-CPIH transition allowance (i.e. 0.15% on the cost of embedded debt and 0.30% on the cost of new debt) would translate from 0.05% in RIIO-2 to 0.06% in PR24 if the proportions of embedded and new debt considered by Ofwat in PR24 Final Methodology were used. Small WOCs are also likely to experience higher costs (or greater risk) related to the RPI-CPIH transition than WASCs and large WOCs.

² SONIA refers to the Sterling Overnight Index Average interest rate benchmark.

1 Introduction

In December 2022, Ofwat published its PR24 Final Methodology, in which it set out its 'early view' on the allowed return on capital for the next price control period (AMP8).³ The document covers Ofwat's proposed methodology and/or values for the parameters underpinning the allowed return on capital, including an indication that the potential value of the company-specific adjustment to the allowed cost of embedded debt for the notional small water-only company (WOC) would be 0.30%.⁴

In view of this, South Staffs Water has asked Oxera to assess the appropriate value for the company-specific adjustment to the allowed cost of embedded debt for AMP8, and to set out how Ofgem's analysis of the additional premia to the cost of debt would apply to PR24.

In its Final Methodology, Ofwat has specified that it would use the balance sheet approach as its primary approach to set the cost of embedded debt allowance. In other words, Ofwat would set the allowance at the average actual cost of debt of all water companies, including water and sewerage companies (WASCs) and WOCs. Ofwat differentiates between small WOCs, including Portsmouth Water, SES Water and South Staffs Water, and WASCs and large WOCs. It explains that WASCs and large WOCs account for over 99% of the outstanding embedded debt, and therefore limits the balance sheet analysis to WASCs and large WOCs 'to avoid the allowance being disproportionately affected by small company financing costs'.⁵

Indeed, Ofwat's own analysis shows that small WOCs' financing costs are significantly higher than those of WASCs and large WOCs: a median of 5.86% vs 4.38% for small WOCs vs large companies respectively.⁶ Based on this evidence, it would be consistent to allow small WOCs to recover their average financing costs in the same way as WASCs and large WOCs are allowed to recover theirs. That would result in a company-specific adjustment of 1.48%, based on the values quoted above.

In addition to the balance sheet analysis based on the actual financing costs (the 'All in' cost), Ofwat estimates the balance sheet costs based on the notional proportions of fixed-rate (67%) and index-linked (33%) debt (the 'Actual-notional' cost). Under this latter approach, Ofwat controls for companies' decisions on the proportions of fixed-rate, index-linked and floating-rate debt to use. Ofwat takes an average of the two approaches for its 'early view' on the point estimate for the cost of embedded debt allowance. We do not consider the 'Actual-notional' approach to be appropriate for small

³ Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

⁴ Ibid., p. 89.

⁵ Ibid., p. 68. Ofwat prefers a median (rather than a simple or a weighted average) of the actual cost of debt of water companies as a measure of the cost of debt of the sector.

⁶ Ibid., Table 4.3. The median is Ofwat's currently preferred measure for the balance sheet analysis.

WOCs, because small WOCs may not have the flexibility to adjust their debt portfolios to the notional company proportions of different types of debt. Notwithstanding, taking an average of Ofwat's 'All-in' and 'Actual-notional' approaches, as per its methodology, would result in the required company-specific adjustment of 0.58%.

The Final Methodology indicates that Ofwat may have the following concerns in relation to letting small WOCs recover their actual financing costs:⁷

- that there are only three small WOCs and therefore any results may be 'skewed by individual companies';
- that the actual cost of embedded debt of small WOCs is driven by those companies' decisions to issue certain types of debt, and that those decisions were under the companies' control.

Instead, Ofwat is minded to allow a 0.30% small company premium (SCP) on the cost of embedded debt.

Ofwat has been setting SCPs for the cost of embedded debt for a number of determinations, while the CMA evaluated and recalibrated those premia. Table 1.1 below summarises the estimates of the SCPs set by Ofwat and the CMA since PR14, as well as the evidence used to calibrate the premia level. As the table shows, historically, the allowed SCP on the cost of embedded debt has ranged from 0.25% to 0.40%.

Table 1.1 PR14 and PR19 SCP precedent

Precedent	Level of SCP	Supporting evidence
Ofwat PR14	25bp	Comparing small WOCs' instruments against WASCs' instruments, controlling for the timing of issuance with a benchmark iBoxx index and gilt yields
CMA PR14 (Bristol Water)	40bp	Comparing Artesian finance with WASCs' fixed bonds
Ofwat PR19	35bp	Comparing small WOCs' bonds with iBoxx, and using the estimate of the outperformance adjustment to account for large companies' costs
CMA PR19 (Bristol Water)	30bp	An in-the-round assessment, including the analysis developed by other parties, precedent, Bristol Water's actual costs, and the actual costs of a notional small WOC
Ofwat PR24 Final Methodology	30bp	Based on precedent, no updated analysis is provided

Source: PwC for Ofwat (2014), 'Company specific adjustments to the WACC', August, https://www.ofwat.gov.uk/wp-content/uploads/2015/10/rpt_com1408pwcuplift.pdf; Competition and Markets Authority (2015), 'Bristol Water plc price determination', 6 October, para. 10.69, https://assets.publishing.service.gov.uk/media/56279924ed915d194b000001/Bristol_Water_plc_final_determination.pdf; Ofwat (2019), 'PR19 final determinations', December, <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Allowed-return-on-capital-technical-appendix.pdf>; Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', 17 March, para. 9.1006, https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_-_web_version_-_CMA.pdf; Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, p. 89,

⁷ Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, pp. 87–88, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

In this report, we build on the analysis previously produced by various stakeholders as outlined in the table above, using the recent data on water companies' debt portfolios. Specifically, we focus on assessing the value of the SCP to be added to the allowed cost of embedded debt by looking at the yields at issuance of the bonds and Artesian finance issued by small WOCs and how these compare against similar instruments of WASCs and large WOCs. We undertake the comparison following two complementary approaches:

- by comparing the yields of the instruments issued by small WOCs with the yields of the instruments issued by large companies around the same time;
- by estimating the difference in yields between the instruments and the benchmark index.

In addition, we use the evidence of bank facilities by comparing small WOCs' and large companies' margins over SONIA using the instruments issued around the same time.

Finally, we discuss additional allowances that Ofwat could consider for the allowed cost of debt on the basis of Ofgem's analysis. In particular, in the RIIO-2 price controls, Ofgem included a 6bp allowance to reflect the additional costs faced by those companies issuing less than £250m per annum (the infrequent issuer premium) and a 5bp allowance to compensate for the costs and risks arising from the transition of the price control indexation from RPI to CPIH.⁸

To summarise, the remainder of the report is structured as follows.

- In section 2, we estimate the value of the SCP to be added to the allowed cost of embedded debt by comparing the debt instruments issued by small WOCs with the instruments issued by WASCs and large WOCs.
- In section 3, we calibrate the infrequent issuer premium and the RPI–CPIH transition allowances set by Ofgem in the RIIO-2 price controls to Ofwat's PR24 Final Methodology.
- In section 4, we set out our conclusions.



⁸ Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', pp. 15–16, November, <https://www.ofgem.gov.uk/publications/riio-ed2-final-determinations>.

What does the new evidence suggest?



In this section, we describe our analysis of the SCP. We start with an overview of the current small WOCs' debt portfolios (section 2.1) and then assess three types of instrument in turn: bonds, including private placements (section 2.2), Artesian debt (section 2.3), and bank facilities (section 2.4). We conclude on the SCP in section 2.5.

2.1 Composition of the small WOCs' debt portfolios

To identify the relevant debt instruments for the analysis, we have examined the debt financing structure of the small WOCs. Ofwat currently considers three WOCs to be small: South Staffs Water, Portsmouth Water, and SES Water.⁹ We also include Bristol Water in this sample as, prior to the acquisition of Bristol Water by Pennon Group, Bristol Water was considered to be a small WOC,¹⁰ and all of Bristol Water's embedded debt was issued prior to the acquisition, i.e. at the time when it was considered to be a small WOC. In addition to Bristol Water's debt instruments, we have included Artesian debt issued by other acquired companies in our assessment.¹¹ For completeness, we show the results with and without including acquired companies.

Figure 2.1 below shows the active debt portfolios of the small WOCs in question as of 31 March 2022, based on the data underlying the Ofwat balance sheet model—i.e. the 2021/22 annual performance report (APR) data (hereafter, the 'Ofwat data').¹²

⁹ Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, p. 70, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

¹⁰ See, for example, Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', 17 March, para. 9.993, https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf.

¹¹ In particular, in addition to Bristol Water, Bournemouth Water, Dee Valley Water and Mid Kent Water have been acquired since Artesian debt was issued.

¹² Ofwat (2022), 'PR24 Balance sheet cost of embedded debt model', December, <https://www.ofwat.gov.uk/publication/pr24-balance-sheet-cost-of-debt-model/>.

Figure 2.1 The composition of the outstanding debt for small WOCs as of March 2022



Note: The 'bonds' category includes bonds and private placements; the 'other loans' category includes debenture stock and preference shares; the 'bank facilities' category includes revolving risk facilities (RCFs) and liquidity facilities. BRL stands for Bristol Water, SSC stands for South Staffs Water, SES stands for SES Water, and PRT stands for Portsmouth Water.

Source: Oxera based on the Ofwat data.

The figure shows that Artesian debt, bonds and bank facilities are the key components of debt financing for small WOCs. Therefore, we focus our analysis on those three types of instrument. We do not analyse the instruments classified as 'other debt', i.e. permanent debenture stock and preference shares. Following this approach, we cover the majority of the embedded debt portfolios held by the small WOCs.

In the following sections, we describe the methodology and results of our analysis for bonds (including private placements), Artesian debt and bank facilities in turn.

2.2 Bonds

To ensure the robustness of the estimates, we assess the SCP embedded in bonds and Artesian debt following two complementary approaches.

- Benchmarking small WOC bond yields against the yields of a selection of contemporaneous WASC and large WOC bonds with similar characteristics.
- Comparing the spreads between bond yields at issuance and iBoxx benchmark index yields for bonds issued by small WOCs, and WASCs and large WOCs.

Both methodologies require us to filter for a sample of relevant instruments to work with, which we describe below.

2.2.1 Bonds filtering

For the assessment of the SCP contained in bond yields, we have selected fixed-rate and index-linked active bonds and private placements of all water companies.¹³

We have started from the Ofwat data, and excluded the following categories of instruments:

- junior debt, as the difference between yields on junior debt and on small WOCs' bonds is unlikely to be primarily due to the size of the issuers;
- debt with a non-bullet maturity structure, due to the practical challenges in estimating its effective interest rate at issuance;
- Artesian debt, as we assessed it separately;
- matured bonds, as the analysis focuses on the active bonds.

Following the initial filtering of the Ofwat data, we have cross-checked the details of the instruments with the Dealogic database to explain any unexpected values.¹⁴

Table 2.1 below lists the identified instruments issued by small WOCs. In addition, we have identified 124 fixed instruments and 108 index-linked instruments issued by WASCs and large WOCs.

Table 2.1 Small WOCs bonds included in the analysis

Company	Category	Type	Issue date	Maturity date	Tenor at issuance (years)	Issuance size	Effective nominal interest rate at issuance ¹
South Staffs Water	Bond	RPI-linked	30/06/2008	30/06/2051	43	£35m	3.77%
Bristol Water	Bond	RPI-linked	18/03/2011	31/03/2041	30	£40m	5.47%
South Staffs Water	Private placement	Fixed-rate	01/09/2021	01/09/2036	15	£20m	2.57%

Note: ¹ For RPI-linked debt, the effective nominal interest rate at issuance is estimated using long-term RPI forecasts contemporaneous with the issuance. The RPI-real interest rate for South Staffs Water's and Bristol Water's bonds issued in 2008 and 2011 were converted into nominal using 2.5% and 2.7% RPI assumptions respectively. Source: The Ofwat data.

There is another active bond that was issued by a small WOC, SES Water, in 2001.¹⁵ The bond was excluded from the analysis at the filtering stage due to its unique characteristics, including the fact that it has:

- sinkable and amortising maturity, with the requirement to start to pay into a reserve fund five years before any amount needs to be

¹³ European Investment Bank (EIB) loans are excluded from the analysis, which makes it conservative (i.e. the SCP is potentially underestimated), as they were issued only by large companies and the terms were relatively favourable.

¹⁴ For example, we have assumed that there was a typo in the Ofwat data where it indicated that Bristol Water had a bond issued in 2001; we assume that the correct issuance date was 2011.

¹⁵ This corresponds to the 'bonds' category of debt portfolio for SES Water in Figure 2.1.

repaid to bond holders; the repayment schedule takes a further five years;

- gearing cap and dividend distribution restrictions;
- third-party default insurance.¹⁶

These features are associated with additional costs that are not fully captured by a single measure of yield at issuance and/or must have affected the company's ability to raise a bond with an AAA credit rating. Therefore, we do not consider this bond and its yield to be representative, and do not include it in the analysis.

For each instrument, we have estimated an equivalent of a nominal yield to maturity (or, in Ofwat's words, 'effective interest rate') at issuance, based on the information on the coupon and on whether the bond was issued at par.¹⁷ In particular, for RPI- and CPI(H)-linked bonds, we have inflated the index-linked coupons with long-term inflation assumptions and a Fisher equation. The CPI inflation is assumed to be 2% for all CPI(H)-linked bonds, while RPI is assumed to be 2.5% before 2010, 2.7% between 2010 and 2015, and 3% thereafter.¹⁸

2.2.2 The direct comparison of small WOCs' with WASCs' and large WOCs' bond yields

The first approach that we follow to quantify the SCP is a direct comparison of the yields of small WOCs' bonds and comparable WASC and large WOCs' bonds. The more comparable the bonds are, the more accurate it would be to attribute the difference in their yields solely to the SCP. Although no two bonds are identical, we maximised comparability based on the following criteria:

- issuance date—we include all bonds issued within nine months before or after the small WOC bonds' issuance dates;
- maturity—we include all bonds with maturity dates within five years before or after the small WOC bonds' maturity dates;
- instrument type—we use only fixed-rate or index-linked instruments as comparators for the small WOC bonds of the same types.

We do not control for credit rating or the original issuance amount, because these parameters may have been affected by the size of the issuer.

Following these selection criteria, we have identified a set of comparators for the three small WOC bonds that we assess (see Table 2.2). Based on the direct comparison analysis, the range of the implied SCP is from -0.29% to 0.55%. On average, the small WOCs' bonds were issued at yields 0.23% higher than the comparator WASCs' and large WOCs' bonds. If measured on a weighted average basis, they were issued at yields 0.22% higher than the comparator bonds.

¹⁶ SES Water (2017), 'Annual report', p. 77.

¹⁷ We assume that the 'effective nominal yield' in Ofwat's model corresponds to a coupon.

¹⁸ The long-term RPI forecast is based on the long-term Bank of England CPI target, plus the long-term RPI-CPI wedge as stated by the Office for Budget Responsibility (OBR). We have reflected the changes in the long-term wedges. For the years before the Bank of England started targeting CPI, we use a 2.5% RPI target.

Table 2.2 Direct comparison of small WOC instruments with comparable WASC and large WOC issues

Company	Category	Type	Issue date	Maturity date	Tenor	Issuance size	Effective nominal interest rate at issuance
South Staffs Water	Bond	RPI-linked	30/06/2008	30/06/2051	43	£35m	3.77%
Anglian Water	Bond	RPI-linked	23/10/2007	01/07/2055	47	£50m	4.06%
Implied SCP							-0.29%
Bristol Water	Bond	RPI-linked	31/03/2011	31/03/2041	30	£40m	5.47%
Yorkshire Water	Private placement	RPI-linked	13/12/2011	13/12/2041	30	£50m	4.92%
Implied SCP							0.55%
South Staffs Water	Private placement	Fixed-rate	01/09/2021	01/09/2036	15	£20m	2.57%
Anglian Water	Bond	Fixed-rate	30/04/2021	30/04/2036	15	£35m	2.14%
Anglian Water	Bond	Fixed-rate	30/04/2021	30/04/2036	15	£40m	2.14%
Severn Trent Water	Bond	Fixed-rate	22/02/2022	22/02/2033	11	£400m	2.73%
Thames Water	Bond	Fixed-rate	31/01/2022	31/01/2032	10	£484m	2.60%
Wessex Water	Bond	Fixed-rate	12/01/2021	12/01/2036	15	£295m	1.38%
Yorkshire Water	Bond	Fixed-rate	27/04/2021	27/10/2032	11	£350m	1.86%
Average comparator yield							2.14%
Implied SCP							0.43%

Source: Oxera analysis of the Ofwat data.

The table shows that the SCP on the South Staffs Water's bond issued in 2008 is negative (-0.29%). In the rest of the report, we show that this bond is the only instrument for which the SCP is negative, and in this sense, is an outlier.¹⁹ We discuss this bond further in the next subsection.

2.2.3 The benchmarking of bond yields via iBoxx

The second approach that we follow to estimate the implied SCP is the comparison of bond yields at issuance with a benchmark iBoxx index. For each group of bonds, i.e. the bonds issued by small WOCs and the bonds issued by WASCs and large WOCs, we estimate the spreads between their yields at issuance and the benchmark iBoxx yields on the days of bond issuance. The difference between the spreads of the two groups of bonds captures the implied SCP.

The iBoxx benchmarking approach, described in this sub-section, and the direct comparison approach, described in the previous sub-section, have their relative strengths and weaknesses. The direct comparison approach controls for the differences in the timing of issuance by selecting instruments issued around the same time. Direct comparison is also not affected by the impact of inflation

¹⁹ See Figure 2.3 for an overview of SCPs for all instruments estimated in this report, using two approaches for bonds and Artesian debt.

assumptions as RPI-linked instruments are compared only with RPI-linked instruments and the long-term inflation expectations must be similar for the bonds issued around the same time.

The iBoxx benchmarking approach also controls for the differences in the timing of issuance. However, to the extent that there are inaccuracies in estimating inflation expectations at the time of bonds' issuance, the results for RPI-linked bonds may be distorted—this is because potential inaccuracies in converting yields between real and nominal are different for bonds issued at different points in time. From the point of view of adjusting yields for inflation expectations, we consider the direct comparison approach to be superior to iBoxx benchmarking. However, the iBoxx benchmarking approach allows the use of a wide sample of active bonds and is not affected by the selection of direct comparators—these are improvements on the other approach.

We have used the same benchmark index as Ofwat uses in its cost of new debt allowance—an average of iBoxx £ non-financials A and BBB 10+ (hereafter, 'the iBoxx index').

Table 2.3 below summarises the implied SCP estimates for the three small WOCs' bonds included in our sample. The fixed-rate South Staffs Water private placement was benchmarked against WASCs' and large WOCs' fixed-rate bonds, while the two RPI-linked bonds were benchmarked against the large companies' RPI-linked instruments. The analysis results in a wide range of -2.23–0.88% for the implied SCP.

Table 2.3 The SCP implied from benchmarking bonds against iBoxx

Company	Category	Type	Issue date	Implied SCP
South Staffs Water	Bond	RPI-linked	30/06/2008	-2.23%
Bristol Water	Bond	RPI-linked	18/03/2011	0.88%
South Staffs Water	Private placement	Fixed-rate	01/09/2021	0.88%
Including Bristol Water				
Range				-2.23–0.88%
Simple average				-0.16%
Weighted average				-0.26%
Excluding Bristol Water				
Range				-2.23–0.88%
Simple average				-0.67%
Weighted average				-1.10%

Note: The small WOCs' bonds are benchmarked against 124 fixed-rate and 108 index-linked bonds issued by WASCs and large WOCs filtered using the criteria described in section 2.2.1.

Source: Oxera analysis, based on Ofwat and IHS Markit data.

The main driver of the -2.23–0.88% range and negative average SCP estimates is the South Staffs Water 2008 RPI-linked bond that was priced with a yield significantly below iBoxx, implying a large negative SCP. As mentioned above, this bond is the only instrument with a

negative SCP.²⁰ Upon checking the details for this bond, we have noted some factors specified in Box 2.1 that potentially explain why its pricing pattern differed from the rest of the small WOC bonds.



Box 2.1 South Staffs Water 2008 bond

Below we outline a list of factors that potentially contribute to the effective nominal interest rate at issuance for the South Staffs Water bond issued in 2008 to be below that of a comparator Anglian bond (see details in Table 2.2) and significantly below iBoxx yield.

- The real gilt yield curve was inverted in 2008—on 30 June 2008, i.e. the issuance date used in the analysis, the longest available 25-year index-linked gilt yield was 0.66%, while a shorter, five-year index-linked gilt yield was 1.49%. The tenor of the South Staffs Water bond is 43 years, which is longer than the average time to maturity of the iBoxx index (19 years on 30 June 2008).²¹ It could be assumed that the difference in the maturity to maturity contributed to the difference in yields. This would be consistent with the observation that the yield on the comparator Anglian Water (a WASC) RPI-linked bond issued shortly before the South Staffs Water bond was also below iBoxx yields.²²
- The South Staffs Water bond effective interest rate is lower than that of the Anglian Water bond (3.77% vs 4.06%, nominal). This could partly be due to the benchmark yield declining by the time the South Staffs Water bond was issued (30 June 2008) compared to the Anglian Water bond's issuance date (23 October 2007): the longest available 25-year index-linked gilt yields were 0.66% and 1.09% on the two dates respectively, i.e. a 43bp decline.
- However, iBoxx credit spread has increased between the two issuance dates and it does not appear in the South Staffs Water bond pricing. Although the actual reason is unclear, it is possible that the bond's credit spread was negotiated a few months in advance of the issuance date and therefore reflects 2007 rather than 2008 pricing. Indeed, in its PR09 business plan, the company reported that it experienced difficulties in raising this bond and hinted at it taking a while to raise the bond:²³

The company has experienced its own difficulties in securing debt finance, at a time before the credit crunch really bedded in. Hence its experience on the pricing and **protracted time taken in securing the recent Bond issue** and Barclay's borrowings is relevant evidence. [emphases added]

²⁰ See Figure 2.3 for an overview of SCPs for all instruments estimated in this report, using two approaches for bonds and Artesian debt.

²¹ Average number of years to maturity for iBoxx £ non-financial 10+ A and BBB on 30 June 2008.

²² See Table 2.2 in section 2.2.2 for details.

²³ South Staffs Water (2009), 'Final Business Plan for 2010 to 2015', p. 30, <https://www.south-staffordshire.com/wp-content/uploads/2022/05/Business-Report-2010-2015.pdf>.

According to South Staffs Water, only one investor was found for this bond at issuance, and although the company intended to raise £50m, it was able to raise only £35m.

- Finally, while we use the long-term RPI inflation of 2.5% to convert an RPI-real coupon of 1.84% into nominal terms, the longest available breakeven inflation was 3.8% based on 25-year gilts. Given that the tenor of the South Staffs Water bond is 43 years, inflation embedded in the pricing of the bond could be between the long-term and the 25-year breakeven estimates. This means that by using the 2.5% inflation assumption, we potentially underestimate the effective nominal yield and the SCP.

Source: Oxera analysis.

The factors outlined in Box 2.1 above potentially explain why we estimate a negative SCP for the South Staffs Water bond issued in 2008. These factors are not related (at least not directly) to the size of the company and it would be prudent to exclude their effect from the estimate of the SCP. However, due to practical challenges of performing such an adjustment and to avoid special treatment to one but not the rest of the bonds, we keep the SCP estimate unchanged and acknowledge that it is likely to be understated. As a result, we may also have understated the overall SCP that aggregates SCP estimates for all small WOC instruments.

2.3 Artesian debt

As Figure 2.1 in section 2.1 demonstrates, a significant proportion of small WOCs' debt portfolios consists of Artesian debt. Artesian debt was used by Bristol Water, Bournemouth Water, Dee Valley Water, Mid Kent Water, South East Water, Southern Water, South Staffs Water and Portsmouth Water. Artesian finance instruments in many ways resemble long-term bonds. There were three Artesian special-purpose vehicles (SPVs) established for the sole purpose of issuing bonds and lending the raised funds to water companies as loans—thus creating three sets of pooled loans. This pooling has helped companies that were considered small and were not able to access the bond market on acceptable terms.

We have excluded Artesian loans issued by Southern Water and South East Water from the analysis, as they are a WASC and a large WOC, respectively. We keep the Artesian loans of the acquired companies in the sample because those companies were independent small WOCs when the debt was issued.²⁴ For completeness, we also show the results excluding those instruments from the analysis.

We have followed the same two approaches for evaluating the implied SCP in Artesian finance as for the other bond issuances described in section 2.2: (i) the direct comparison with contemporaneous WASCs' and large WOCs' bonds; and (ii) the benchmarking of small WOCs' Artesian loan yields and WASCs' and large WOCs' bond yields at issuance against the iBoxx index yields on the same days.

²⁴ In particular, Bristol Water, Bournemouth Water, Dee Valley Water and Mid Kent Water have been acquired since Artesian debt was issued.

We describe the analysis under the direct comparison and iBoxx benchmarking approaches below.

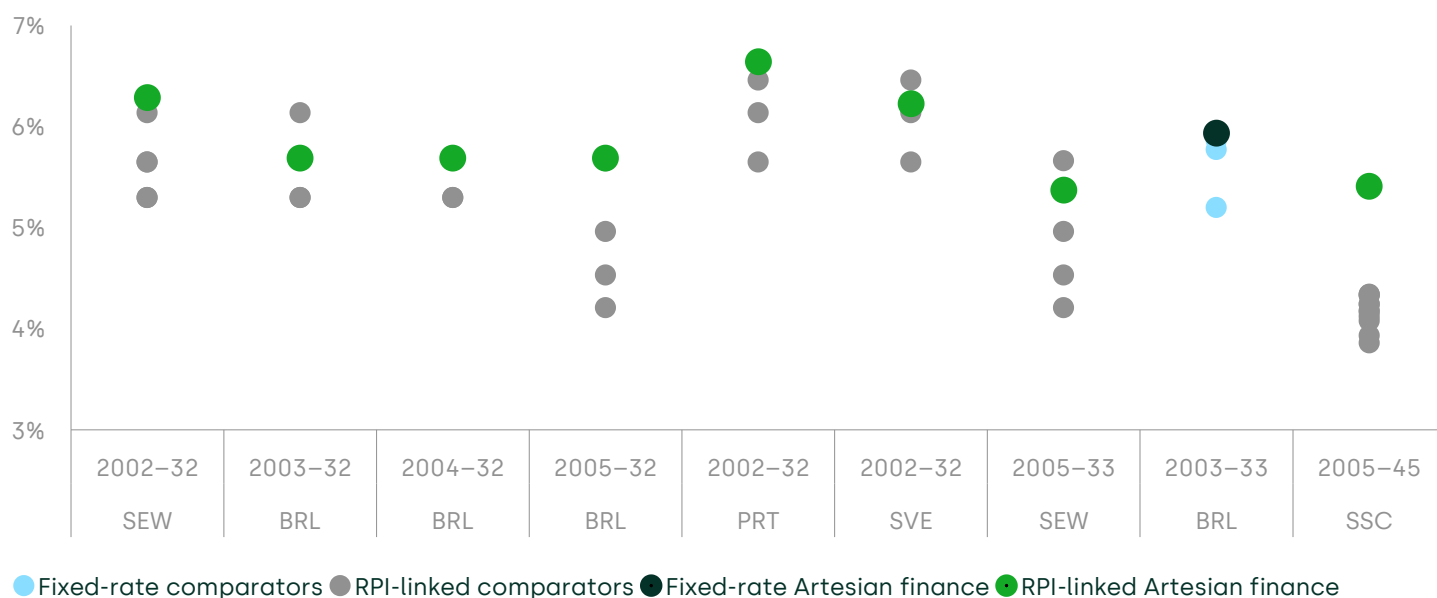
2.3.1 The direct comparison of Artesian finance with WASCs' and large WOCs' bonds

To choose comparators for each Artesian loan, we use the same criteria as for the bonds analysis in section 2.2.2, i.e.:

- issuance date—we include all bonds issued within nine months before or after the Artesian loans' issuance dates;
- maturity—we include all bonds with maturity dates within five years before or after the Artesian loans' maturity dates;
- instrument type—we use only fixed-rate or index-linked instruments as comparators for the Artesian loans of the same type.

Figure 2.2 and Table 2.4 below summarise the direct comparison between Artesian finance and WASCs' and large WOCs' bonds. Table A1.1 in appendix A1 also lists all comparators used in the analysis. Artesian finance was, on average, issued at 0.53% higher yields than the comparable WASCs' bonds (or 0.66% if a weighted average is used).²⁵ Across all Artesian finance instruments, there is a significant range of the implied SCPs: 0.11–1.14%.

Figure 2.2 Direct comparison of Artesian finance with WASCs' and large WOCs' bond yields at issuance



Note: All effective yields at issuance have been expressed in nominal terms using a long-term RPI rates forecast contemporaneous with the instruments' issuance dates.
 Source: Ofwat data.

Table 2.4 The SCP implied from the direct comparison of Artesian finance with WASCs' and large WOCs' bonds

	Small WOCs	Small WOCs (excl. acquired companies)
Range of SCPs	0.11–1.14%	0.56–1.14%

²⁵ The weighted average SCP for direct comparisons is calculated by first estimating an SCP for each bond and then using the small WOC bonds' principal amounts at issuance as weights to estimate the weighted average.

	Small WOCs	Small WOCs (excl. acquired companies)
Average SCP	0.53%	0.85%
Weighted average SCP	0.66%	0.92%

Note: The acquired companies include Bristol Water, Bournemouth Water, Mid Kent Water and Dee Valley Water.

Source: Oxera analysis of Ofwat data.

2.3.2 The benchmarking of Artesian finance against WASCs' and large WOCs' bond yields via iBoxx

In addition to the direct comparison of Artesian finance with WASCs' and large WOCs' bonds, we have estimated the SCP implied from Artesian debt by benchmarking the spreads of nine small WOCs' Artesian loans and WASCs' and large WOCs' bonds against the iBoxx index on the days of issuance. Artesian finance instruments that are fixed-rate and linked to inflation are compared with fixed-rate and index-linked WASCs' and large WOCs' bonds respectively.

As explained above (see section 2.2.3), this methodology allows to control for the timing of issuance—this is also achieved in the direct comparison approach described in the previous sub-section. In addition, while we consider the direct comparison approach to be less affected by potential inaccuracies in converting yields between real and nominal, the iBoxx benchmarking approach allows the use of a wide sample of active bonds and is not affected by the selection of direct comparators.

Table 2.5 The SCP implied from benchmarking Artesian finance against iBoxx

below presents the summary statistics for the implied SCPs of individual loans. The SCP implied from the Artesian debt benchmarking against iBoxx is 1.00% based on a simple average and 1.08% based on a weighted average. For completeness, we have also estimated the implied SCP for a sample of small WOCs excluding companies that have been acquired since the debt was issued. This results in an SCP of 1.15% and 1.23%, based on a simple and weighted average respectively.

Table 2.5 The SCP implied from benchmarking Artesian finance against iBoxx

	Small WOCs	Small WOCs (excl. acquired companies)
Range of SCPs	0.50–1.48%	0.81–1.48%
Average SCP	1.00%	1.15%
Weighted average SCP	1.08%	1.23%

Note: The acquired companies include Bristol Water, Bournemouth Water, Mid Kent Water and Dee Valley Water.

Source: Oxera analysis of the Ofwat data.

2.4 Bank facilities

Another key source of debt financing for small WOCs is bank facilities in the form of RCFs and other liquidity facilities (see Figure 2.1 in section 2.1 above). Ofwat excludes bank facilities from the balance

sheet model, explaining that liquidity costs are covered by a separate issuance and liquidity cost allowance.²⁶ However, as Figure 2.1 shows, these facilities represent a significant proportion of total debt for small WOCs. The small WOCs' greater reliance on bank facilities can be explained by difficulties that small WOCs may experience in accessing other forms of financing, such as bond issuances, efficiently. Irrespective of how Ofwat remunerates those costs for WASCs and large WOCs, there may be an SCP embedded in them, which would justify an uplift to the allowance for small WOCs.

Based on the Ofwat data, we have identified all RCF and liquidity facilities with floating interest rates linked to SONIA or a SONIA derivative.

This filtering process results in a sample of 34 bank facilities: 28 bank facilities for WASCs and large WOCs, and six facilities for small WOCs. A further facility for South Staffs Water has been added based on the information provided in the company's annual accounts.²⁷ The additional South Staffs Water facility was initially excluded by the filtering, as it has a derivative associated with it that swaps a floating rate for a fixed one and therefore is classified as a fixed-rate instrument in the Ofwat data. Although we do consider derivatives to be part of an overall debt portfolio, for the purposes of estimating the SCP and for comparability with other floating-rate instruments we use the original facility excluding the impact of derivatives. It would be complementary to our analysis of floating-rate instruments to identify any combinations of fixed-rate debt and swaps that convert fixed rates to floating. However, the Ofwat data does not clearly match debt and swap instruments in this way to enable us to undertake such an analysis.

To estimate the SCP implied from the small WOCs' bank facilities, we select WASC and large WOC comparator bank facilities for each of the small WOC instruments. Where possible, we have selected comparators that have been arranged within one month of the issuance date of the small WOCs' facilities. For two facilities for which that was not possible, we have selected those that have been arranged within three months. We have also excluded facilities with short maturities of less than one year.

Once the comparators are chosen, we benchmark their margins over SONIA.²⁸

We consider that this approach is preferable to averaging margins over SONIA for all WASCs' and large WOCs' facilities and using that average to estimate the SCP embedded in individual small WOCs' instruments. This is because margins are not stable over time and a

²⁶ Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', December, p. 59, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

²⁷ South Staffordshire Water (2022), 'Annual report and financial statements for the year ended 31 March 2022', p. 109.

²⁸ For the facilities priced with SONIA swaps, such as three-month SONIA, we have added the difference between SONIA and the relevant swap on the day of the issuance of the facility to the facility margin.

range of factors, such as supply and demand for these instruments or the pricing of credit risk, affect the margins.

Table 2.6 shows the results of benchmarking bank facilities. The analysis implies a wide range of SCPs of 0.00–0.79%. On average, small WOCs' bank facilities are priced at a 0.40% higher margin than bank facilities of WASCs and large WOCs (with the weighted average equivalent of 0.38%).²⁹ For completeness, we have estimated the average margin and the implied SCP excluding Bristol Water given that the company has been acquired. Without Bristol Water, the implied SCP is 0.39% on a simple and 0.36% on a weighted average basis.

Table 2.6 Small WOCs' bank facilities

Company	Issue date	Maturity date	Issuance size	Margin over SONIA
SES Water	19/10/2018	19/10/2023	£50m	0.50%
United Utilities Water	26/09/2018	26/09/2025	£40m	0.50%
Implied SCP				0.00%
Bristol Water	30/06/2018	30/06/2023	£50m	0.76%
United Utilities Water	08/06/2018	08/09/2022	£40m	0.35%
Implied SCP				0.41%
Bristol Water	31/12/2018	31/12/2023	£35m	0.81%
Northumbrian Water	17/12/2018	17/12/2025	£450m	0.40%
United Utilities Water	20/12/2018	20/12/2025	£40m	0.33%
Average comparator margin				0.37%
Implied SCP				0.44%
South Staffs Water	01/07/2020	01/07/2023	£30m	1.20%
United Utilities Water	24/04/2020	24/04/2025	£40m	0.45%
Implied SCP				0.75%
Portsmouth Water	02/03/2021	02/03/2025	£55m	1.25%
Severn Trent Water	22/04/2021	22/04/2026	£1,000m	0.46%
Implied SCP				0.79%
SES Water	16/03/2022	16/03/2025	£25m	0.95%
United Utilities Water	24/03/2022	24/03/2027	£40m	0.30%
Yorkshire Water	25/03/2022	23/03/2023	£90m	1.53%
Average comparator margin				0.91%
Implied SCP				0.04%
Including Bristol Water				
Simple average SCP				0.40%
Weighted average SCP				0.38%
Excluding Bristol Water				
Simple average SCP				0.39%
Weighted average SCP				0.36%

Note: Values are rounded. ¹ Estimated using small WOCs' margins over SONIA and a simple average of the margins over SONIA for WASCs and large WOCs.

Source: The Ofwat data; South Staffordshire Water (2022), 'Annual report and financial statements for the year ended 31 March 2022', p. 109.

²⁹ Using the drawn amounts of small WOCs' facilities as weights.

2.5 Small company premium conclusions

In this analysis, we have examined a wide range of evidence for the SCP based on different categories of debt and methodological approaches. Table 2.7 and Figure 2.3 below present an overview of the evidence described in the previous sections.

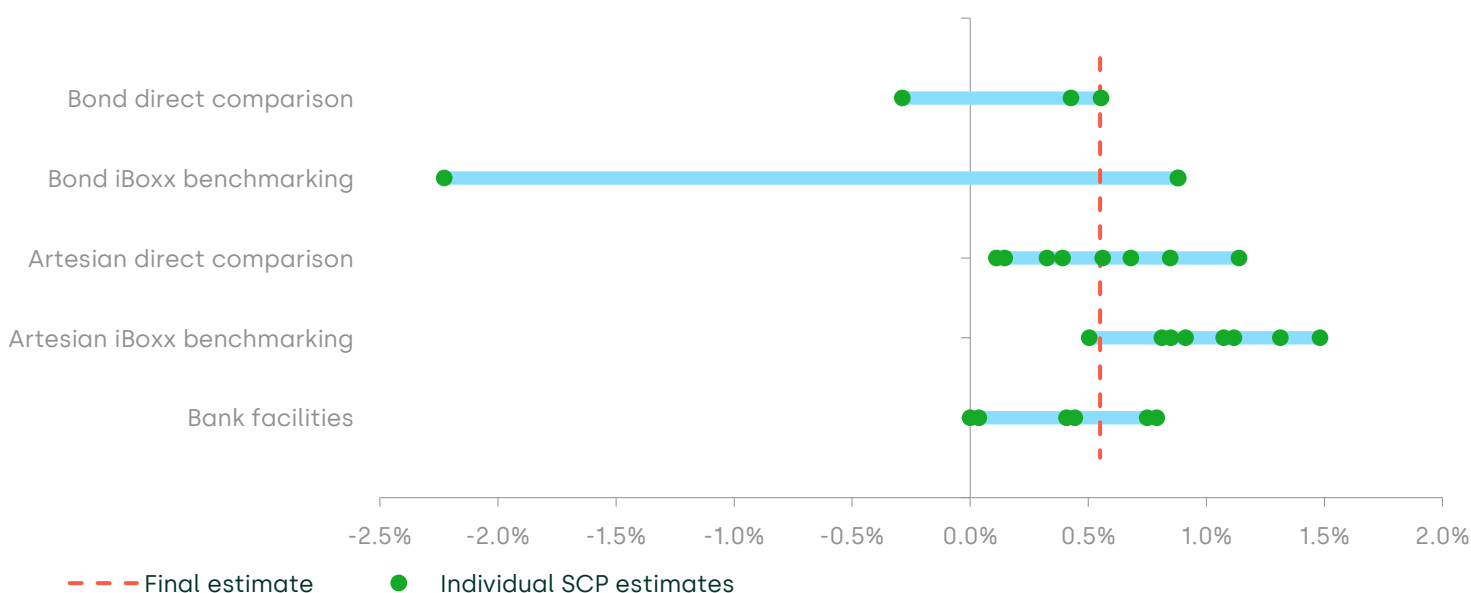
Table 2.7 Overview of the implied SCP estimates

	Simple average	Weighted average	Simple average (excl. acquired companies) ¹	Weighted average (excl. acquired companies) ¹
Direct comparison				
Bond direct comparison ²	0.23%	0.22%	0.07%	-0.03%
Artesian direct comparison ²	0.53%	0.66%	0.85%	0.92%
Bank facilities	0.40%	0.38%	0.39%	0.36%
All instruments³	0.44%	0.55%	0.43%	0.59%
iBoxx benchmarking				
Bond iBoxx benchmarking	-0.16%	-0.26%	-0.67%	-1.10%
Artesian iBoxx benchmarking	1.00%	1.08%	1.15%	1.23%
Bank facilities	0.40%	0.38%	0.39%	0.36%
All instruments³	0.61%	0.76%	0.32%	0.58%

Note: ¹ For Artesian iBoxx benchmarking, the acquired companies include Bournemouth Water, Bristol Water, Dee Valley Water and Mid Kent Water. For all other categories the acquired companies include Bristol Water. ² The weighted average SCP for direct comparisons is calculated by first estimating an SCP for each bond and then using the bonds' principal amounts at issuance as weights to estimate the weighted average. ³ The simple average SCP for all instruments is an average of individual instruments' SCPs rather than the average of SCPs corresponding to the categories presented in the table.

Source: Oxera analysis.

Figure 2.3 Overview of the implied SCP estimates



Note: The figure shows all assessed instruments of small WOCs—whether acquired or not. The two negative SCP estimates are both for South Staffs Water's bond issued in 2008, estimated following the direct comparison and the iBoxx benchmarking approaches.

Source: Oxera analysis.

The range of SCP estimates for individual instruments is wide: from -2.23% on a South Staffs Water bond issued in 2008 to 1.48% on the South Staffs Artesian finance instrument, both estimated using the iBoxx benchmarking approach. However, given that only one out of the assessed 18 small WOC instruments has an SCP below zero (under both the direct comparison and iBoxx benchmarking approaches), the evidence clearly demonstrates a positive SCP. Moreover, 13 out of the assessed 18 are above Ofwat's current estimate of 0.30%.

To draw conclusions based on all the evidence in aggregate, we have estimated simple and weighted average SCPs across the instruments (see Table 2.7 for the results). The weighted average is reflective of the SCP embedded into the small WOCs' debt portfolios at issuance, taking into account the actual composition of those portfolios. The simple average does not depend on that composition but is representative of the SCP that a hypothetical small WOC may have experienced when issuing its debt.

We see no reason to exclude the instruments of the acquired companies when estimating a simple average—those instruments increase the size of the sample and are representative of a potential SCP that a small WOC may have had on its embedded debt. However, for the weighted average, it would be appropriate to limit the sample to the instruments of those companies that are currently considered to be small WOCs—which would most accurately reflect the SCP embedded in their debt portfolios.

For the iBoxx benchmarking approach, the simple average SCP of all the assessed small WOC instruments, including those of the acquired companies, is 0.61%. The weighted average excluding the acquired companies is 0.58%. Using the direct comparison approach, the simple average of all instruments including those of acquired companies is 0.44%, while the weighted average excluding the acquired companies is 0.59%.

Combining these results by taking a simple average leads to a final SCP estimate of **0.55%**.

What would Ofgem's precedent imply?



3 Additional cost of debt premia based on Ofgem precedent

In this section, we discuss additional allowances that Ofwat could consider for its cost of debt allowance based on the recent Ofgem RIIO-2 analysis. In particular, we discuss the potential for the allowance to cover the additional costs that can be faced by infrequent debt issuers, such as small WOCs (section 3.1) on their new debt, and to mitigate the costs of managing the RPI-CPIH transition (section 3.2).

3.1 Infrequent issuer premium on the allowed cost of new debt

In the RIIO-ED2 and RIIO-GD&T2 price controls, Ofgem included a 6bp infrequent issuer premium in its allowance for the cost of debt. The premium reflects a possibly higher cost of new debt for those companies that expect to issue the new debt of smaller sizes or issue new debt less frequently than other network companies do.³⁰

In particular, Ofgem's estimate of the infrequent issuer premium is based on evidence from a constant maturity swap (CMS). The CMS would be used to hedge interest rate risk from infrequent issuance, i.e. from the risk of raising debt at moments when corporate bond yields are particularly high. This analysis resulted in a 26bp premium on the allowed cost of new debt.³¹ The final value of the infrequent issuer premium set by Ofgem was 6bp on the basis of the proportion of new debt considered by Ofgem (22%) in the RIIO-ED2 Final Determinations.³² Ofgem provides the infrequent issuer premium allowance to those notional companies that are expected to issue less than £250m of debt per year in RIIO-ED2 (and £150m per year in RIIO-GD&T2), assessed at the licensee level.³³

Small WOCs' debt portfolios are concentrated—i.e. consist of a limited number of instruments—which suggests that those companies do not issue debt frequently. This is shown by the fact that the largest debt instrument comprises more than half of each of the small WOCs' debt portfolios.³⁴ Furthermore, as per Ofgem's alternative justification of the infrequent issuer premium, small WOCs have typically issued debt in smaller amounts than the rest of the sector—an average bond or private placement issuance size is £52m for small WOCs compared with £154m for the rest of companies.³⁵ As a result, the principles about infrequent issuers that are relied on in the energy sector are

³⁰ Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', para. 2.46, 30 November.

³¹ Ofgem did not include a premium on the allowed cost of embedded debt.

³² Ofgem does not explicitly explain this last step in the RIIO-GD&T2 Final Determinations. See Ofgem (2021), 'Decision - RIIO-2 Final Determinations – Finance Annex (REVISED)', paras 2.61–2.62, 3 February.

³³ The figure of £250m corresponds to the benchmark issuance size, while the £100m reduction to £150m corresponds to the potential to tap £100m at a date later than when the bond was issued.

³⁴ For Portsmouth Water, SES Water and South Staffs Water the largest debt instrument is equivalent to 71%, 76% and 66% of their total respective debt portfolios. Oxera analysis of Ofwat data based on debt principle outstanding as of 31 March 2022. For Portsmouth Water, the largest debt instrument is a bank loan.

³⁵ Oxera analysis of Ofwat data based on original issuance size of bonds and private placements for currently outstanding debt (as of 31 March 2022).

likely to also apply in the water sector, i.e. that small WOCs issue debt infrequently and in small amounts.

Applying a notional 55% gearing to 2021/22 regulatory capital values (RCVs) of Portsmouth Water, SES Water and South Staffs Water results in notional debt portfolios of £104m, £164m and £247m respectively.³⁶ On a notional basis, only 17% of those portfolios corresponds to the new debt, i.e. will be issued in AMP8. These estimates suggest that small WOCs would be expected to issue far less than £250m per annum and would be eligible for Ofgem's allowance if it applied to them.

In Table 3.1 below, we calculate the value of the infrequent issuer premium that would result from 'recalibrating' Ofgem's estimate of 26bp for the cost of new debt by Ofwat's proportion of new debt considered in the PR24 Final Methodology. We find that 6bp under Ofgem's assumed notional debt structure would be equivalent to 4bp under Ofwat's one.

Table 3.1 Infrequent issuer premium allowance re-calibration to PR24

Parameter	Calculations	Ofgem RIIO-ED2 Final Determinations	Ofwat PR24
Infrequent issuer premium	[A]	26bp	26bp
Share of new debt	[B]	22%	17%
Infrequent issuer premium allowance	[C] = [A] * [B]	6bp	4bp

Note: The values in the table are rounded.

Source: Oxera analysis, based on Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', 30 November; and Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', p. 84, December, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

3.2 RPI-CPIH transition allowance

In both RIIO-ED2 and RIIO-GD&T2, Ofgem has transitioned from RPI to CPIH indexation of the regulatory asset base. To reflect the costs stemming from the RPI-CPIH transition in relation to the index-linked share of both embedded and new debt, Ofgem set a 5bp premium to the cost of debt allowance.³⁷

Specifically, for the allowed cost of embedded debt, Ofgem applied a premium of 15bp on the basis of the cost of mitigating RPI/CPIH basis risk through swaps. For the allowed cost of new debt, Ofgem used a 30bp premium to reflect the additional costs of issuing CPI- or CPIH-linked debt. In particular, Ofgem considered the premium by comparing the yields at issuance for CPI- and CPIH-linked debt vs RPI-linked debt. On the basis of the proportion of new and embedded debt

³⁶ Oxera analysis of Ofwat (2022), 'Regulatory capital value updates', June, <https://www.ofwat.gov.uk/publications/regulatory-capital-value-updates/>.

³⁷ Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', para. 2.40, 30 November.

assumed by Ofgem, the regulator added an allowance of 5bp to the total allowed cost of debt.³⁸

In Table 3.2 below, we 'recalibrate' the value of Ofgem's RPI-CPIH transition allowance (i.e. 15bp on the cost of embedded debt and 30bp on the cost of new debt) using the proportions of embedded and new debt considered by Ofwat in PR24. We show that a 6bp allowance would be consistent with Ofwat's PR24 assumptions for the proportions of embedded and new debt.

Table 3.2 RPI-CPIH transition allowance re-calibration to PR24

Parameter	Calculations	Ofgem RIIO-ED2 Final Determinations	Ofwat PR24
Basis risk	[A]	15bp	15bp
Share of index-linked debt	[B]	25%	33%
Proportion of embedded debt	[C]	78%	83%
Basis risk allowance	[D] = [A] * [B] * [C]	3bp	4bp
CPIH-linked debt issuance premium	[E]	30bp	30bp
Share of index-linked debt	[B]	25%	33%
Proportion of new debt	[F]	22%	17%
CPIH-linked debt issuance premium allowance	[G] = [E] * [B] * [F]	2bp	2bp
RPI-CPIH transition allowance	[H] = [D] + [G]	5bp	6bp

Note: The values in the table are rounded.

Source: Oxera analysis, based on Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', 30 November; and Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24. Appendix 11: Allowed return on capital', p. 84, December, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

In the PR24 Final Methodology, Ofwat is transitioning from partial RPI/CPIH indexation to the full CPIH indexation of RCV. However, Ofwat has indicated its intention to not provide an additional allowance to fund costs relating to the transition. Specifically, Ofwat is of the view that, by the start of AMP8, the sector will have had nearly ten years to plan the transition since Ofwat suggested the CPIH transition for the first time in 2015, and that it was not convinced that Ofgem's evidence applies to the water sector.³⁹

We have not reviewed Ofgem's underlying evidence, but have two observations on the applicability of Ofgem's precedent to the water sector.

First, 86% of the active index-linked bonds and Artesian debt across all water companies was issued before 2015,⁴⁰ i.e. before Ofwat suggested the RPI-CPIH transition. Most of the debt issued after 2015

³⁸ Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', para. 2.42, 30 November. See Table 3.2 for the explanation of the calculation.

³⁹ Ofwat (2022), 'Creating tomorrow, together: Our final methodology for PR24.

Appendix 11: Allowed return on capital', p. 84, December, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf.

⁴⁰ Oxera analysis of Ofwat data.

is indeed linked to CPI(H).⁴¹ Refinancing RPI-linked debt may not be possible if bond conditions restrict this option or the amount is greater than the company can finance. If it is possible to refinance RPI-linked debt, the same principles are likely to apply to the associated costs of refinancing as to the costs of hedging the RPI/CPIH basis risk and issuing new CPI(H)-linked debt.

Second, small WOCs have a high proportion of RPI-linked debt and lack of flexibility to choose the most appropriate proportion of RPI- and CPIH-linked debt going forward, applied to the embedded and new debt respectively.

Considering the allowed cost of embedded debt separately from the cost of new debt, small WOCs have a large proportion of RPI-linked debt (98%, based on Ofwat's balance sheet model), as a result of the Artesian financing in the early 2000s. This proportion is much higher than the one assumed by Ofwat for the notional company for AMP8 (33%), and the one reported by WASCs and large WOCs (50% with swaps and 40% without swaps, based on Ofwat's balance sheet model). As a consequence, the RPI/CPIH basis risk would apply to a greater proportion of the small WOCs' debt portfolios than in the case of the notional company and the rest of the sector.

With respect to the cost of new debt, Ofwat considers that, over the course of AMP8, the premium between RPI- and CPI(H)-linked issuances will diminish as RPI-linked and CPIH-linked yields fully converge in 2030. As such, Ofwat considers that applying the currently observable premium would lead to overcompensation. Due to the lack of flexibility to issue both RPI- and CPI(H)-linked debt, small WOCs may be disadvantaged. Without an additional premium, and assuming that RPI-linked debt is cheaper than CPI(H)-linked debt at the beginning of AMP8, small WOCs would either need to issue RPI-linked debt and be exposed to the RPI/CPIH basis risk on the new debt, or issue CPI(H)-linked debt and bear the cost of the premium. WASCs and large WOCs may instead have the flexibility to wait until the end of AMP8 once RPI and CPI converge before issuing further CPI(H)-linked debt, in order to avoid paying a CPIH issuance premium.

Based on the above, small WOCs would experience higher costs (or greater risk) than WASCs and large WOCs.

⁴¹ Based on Oxera analysis of Ofwat data, 12 out of 20 index-linked bonds and private placements issued by water companies since 2016 are linked either to CPI or CPIH.

4 Conclusions

We started this report by observing that, based on Ofwat's analysis, the actual cost of embedded debt is 0.58–1.48% higher for small WOCs than for WASCs and large WOCs. An uplift of this magnitude would be required to allow small WOCs to recover their actual costs on average, in the same way as WASCs and large WOCs would do.

We have complemented this observation with analysis following a conceptually similar methodology to the one that underpins Ofwat's 0.30% 'early view' estimate. Based on the yields at issuance from 18 active instruments of seven small WOCs, we have estimated an SCP for the cost of embedded debt to be **0.55%**.

In addition to assessing the SCP for the cost of *embedded* debt, we have considered how Ofgem's RIIO-2 analysis of the infrequent issuer premium of 0.26% on the cost of *new* debt could apply to PR24. We have concluded that small WOCs are sufficiently small to be eligible for an allowance equivalent to that of Ofgem's.

Finally, we have shown that the value of Ofgem's RPI–CPIH transition allowance (i.e. 0.15% on the cost of embedded debt and 0.30% on the cost of new debt) would translate from 0.05% in RIIO-2 to 0.06% in PR24 if the proportions of embedded and new debt considered by Ofwat in PR24 were used.

Table A1.1 lists the comparators used for each of the small WOC Artesian instruments for the direct comparison approach, as described in section 2.3.1 and illustrated in Figure 2.2.

Table A1.1 Direct comparison of Artesian finance with WASCs' and large WOCs' bond yields at issuance

Company	Type	Issue date	Maturity date	Effective nominal interest rate at issuance
Mid Kent Water	RPI-linked	09/12/2002	30/09/2032	6.28%
Anglian Water	RPI-linked	30/07/2002	30/07/2032	5.65%
Anglian Water	RPI-linked	30/07/2002	30/07/2032	5.65%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
United Utilities Water	RPI-linked	04/12/2002	06/12/2032	6.14%
Average comparator yields				5.60%
Implied SCP				0.68%
Bristol Water	RPI-linked	08/05/2003	30/09/2032	5.69%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
United Utilities Water	RPI-linked	04/12/2002	06/12/2032	6.14%
Average comparator yields				5.58%
Implied SCP				0.11%
Bristol Water	RPI-linked	13/02/2004	30/09/2032	5.69%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
Southern Water	RPI-linked	23/07/2003	31/03/2034	5.30%
Average comparator yields				5.30%
Implied SCP				0.39%
Bristol Water	RPI-linked	13/06/2005	30/09/2032	5.69%
Anglian Water	RPI-linked	20/04/2005	20/04/2035	4.96%
Northumbrian Water	RPI-linked	27/09/2005	15/07/2036	4.21%
South West Water	RPI-linked	20/04/2005	30/09/2033	5.66%
United Utilities Water	RPI-linked	05/10/2005	05/10/2035	4.53%
Average comparator yields				4.84%
Implied SCP				0.85%
Portsmouth Water	RPI-linked	26/06/2002	30/09/2032	6.64%
Anglian Water	RPI-linked	30/07/2002	30/07/2032	5.65%
Severn Trent Water	RPI-linked	30/05/2001	30/05/2028	6.46%
United Utilities Water	RPI-linked	04/12/2002	06/12/2032	6.14%
Average comparator yields				6.08%
Implied SCP				0.56%
Dee Valley Water	RPI-linked	19/06/2002	30/09/2032	6.23%
Anglian Water	RPI-linked	30/07/2002	30/07/2032	5.65%
Severn Trent Water	RPI-linked	30/05/2001	30/05/2028	6.46%
United Utilities Water	RPI-linked	04/12/2002	06/12/2032	6.14%

Company	Type	Issue date	Maturity date	Effective nominal interest rate at issuance
Average comparator yields	RPI-linked			6.08%
Implied SCP				0.15%
Bournemouth Water	RPI-linked	24/06/2005	30/09/2033	5.37%
Anglian Water	RPI-linked	20/04/2005	20/04/2035	4.96%
Northumbrian Water	RPI-linked	27/09/2005	15/07/2036	4.21%
South West Water	RPI-linked	20/04/2005	30/09/2033	5.66%
United Utilities Water	RPI-linked	05/10/2005	05/10/2035	4.53%
Average comparator yields				4.84%
Implied SCP				0.53%
Bristol Water	Fixed-rate	30/09/2003	30/09/2033	5.93%
Northumbrian Water	Fixed-rate	30/12/2002	29/04/2033	5.77%
Southern Water	Fixed-rate	23/07/2003	31/03/2029	5.20%
Wessex Water	Fixed-rate	16/10/2003	14/10/2033	5.86%
Average comparator yields				5.61%
Implied SCP				0.33%
South Staffs Water	RPI-linked	20/12/2005	20/09/2045	5.41%
Anglian Water	RPI-linked	28/04/2006	28/01/2046	4.24%
Anglian Water	RPI-linked	04/05/2006	30/07/2046	4.24%
Anglian Water	RPI-linked	12/07/2006	12/07/2049	4.33%
Northumbrian Water	RPI-linked	30/01/2006	30/01/2041	4.18%
Northumbrian Water	RPI-linked	14/06/2006	16/07/2049	4.17%
United Utilities Water	RPI-linked	14/12/2005	14/12/2040	4.33%
United Utilities Water	RPI-linked	31/01/2006	31/01/2041	3.86%
United Utilities Water	RPI-linked	28/03/2006	28/03/2042	4.12%
United Utilities Water	RPI-linked	06/04/2006	06/04/2043	4.08%
United Utilities Water	RPI-linked	13/02/2006	13/02/2046	3.93%
United Utilities Water	RPI-linked	19/05/2006	19/05/2049	4.34%
Wessex Water	RPI-linked	01/08/2006	31/07/2046	5.41%
Average comparator yields				4.27%
Implied SCP				1.14%

Source: Oxera analysis of Ofwat data.

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