

PR19 Redetermination Bristol Water: Response to CMA Provisional Findings (Non-confidential)

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bristolwater.co.uk

Executive summary

1. Introduction

- 1 This document provides Bristol Water's response to the CMA's provisional findings in relation to Ofwat's PR19 price review (the **PFs**).
- 2 In February 2020 we rejected Ofwat's PR19 final determination (FD), and we sought redetermination from the CMA, on the grounds of four specific groups of errors, as described in our Statement of Case, namely:
 - the cost of capital was set too low for a small company like Bristol Water (**Cost of capital** errors);
 - the cost challenge was unachievable, set beyond the upper quartile and was inconsistent with the service levels in our plan (**Cost allowance errors**);
 - the balance of risk represented an unacceptable level of risk for the business (**Balance of** risk errors); and
 - the combined effect of these errors meant that Bristol Water could not efficiently finance the delivery of our business plan for customers (**Financeability error**).
- 3 The PFs represent movement in the right direction in each of the four areas of error above. However, material gaps remain between the PFs and Bristol Water's position:
 - the cost of capital set for a small company like Bristol Water continues to be set too low; and
 - the level of cost allowance is set too low to allow our committed service levels to be delivered.
- 4 We agree with the PFs reaching different decisions to the FD in a number of important areas which act to establish a better balance between risk and reward. These include:
 - correcting Ofwat's approach to setting a point estimate for the industry cost of capital to strike a better balance between bill levels and the risks to customers from underinvestment and to reflect the asymmetry in the incentive framework;
 - reaffirming precedent in the application of a Company Specific Adjustment to the cost of debt for smaller companies including removal of the customer benefits test;
 - reducing the asymmetry in 'sharing rates' for cost overspends to avoid unintended consequences for investment incentives;
 - removing of the gearing outperformance sharing mechanism (**GOSM**) in light of a lack of evidence to support it, concerns related to its design, and its clear departure from regulatory precedent; and
 - a more robust and realistic market-based approach to financeability testing, using the actual metrics used by credit rating agencies, as a cross check on the adequacy of the



overall settlement in supporting companies to secure investment-grade credit ratings based on the notional capital structure.

- 5 However, there are a number of areas where the CMA's provisional findings need to change in order to provide a balanced and financeable package. Most significant of these are:
 - The PFs recognise that maintaining leakage at lower levels results in higher costs. However, in the application of its analysis, the CMA has only allowed an additional allowance for levels of leakage that go beyond the industry upper quartile, despite the base cost models only providing remuneration for an average level of leakage. The CMA has also used a measure of normalising leakage that is inferior to other approaches and this understates the strength of our comparative performance (and the increasing marginal cost of leakage as its level reduces). We ask the CMA to reassess its approach to setting our leakage cost allowances.
 - The PFs set out the CMA's clear logic for making use of most recent cost data. The CMA is also clear that the relationship between service and costs is important, although it can be difficult to quantify. We concur with the CMA's logic and draw attention to the latest industry cost data which is now available for 2019/20 financial year. Our analysis of this data shows clear evidence, for the water service, that costs are increasing because of the need to meet new and more challenging performance commitments underlining the point that improving service levels has an additional cost for an efficient company. We ask the CMA to update the cost models for the recently published 2019/20 data.
 - The PFs restate the fundamental requirement for an uplift to the industry cost of capital for a small company. However, the CMA has not consistently applied this principle, insofar as it has not recognised a small company premium on new debt and equity, nor the need to adjust the new to embedded debt weights in the cost of debt allowance for a small notional company. We ask the CMA to reassess the estimation of the Company Specific Adjustment allowance.
 - The PFs recognise that there is a clear link between the sufficiency of allowed returns and investment, and therefore the importance of appropriately setting the cost of equity to ensure that the right incentives for critical investment are secured. However, the proposed cost of equity is too small given the risk exposures implied by PR19 and our operational leverage which concentrates equity risk, even after the CMA's proposed redeterminations. We ask the CMA to reconsider the cost of equity to better align with the overall challenges for delivery of the package of outcomes.
- 6 We have sought to keep our response brief and focussed. As such we do not respond on all points or repeat evidence, rather we highlight specific areas for observation and focus our comments on new evidence to support our arguments on specific points where further movement is required in the CMA's Final Determination.
- 7 We have structured the remainder of our response to the PFs to reflect that of our Statement of Case:
 - cost of capital (section A);



- cost allowances; (section B);
- balance of risk (section C);
- financeability (section D);
- Annex 1: Additional analysis (cost allowances); and
- Annex 2: ODI and RORE analysis.

2. Cost of capital

2.1 Industry cost of capital

- 8 The CMA's approach in its redetermination of the industry cost of capital considers a range of different evidence across each key parameter, and in general refrains from the selective and downwardly biased use of evidence as adopted in Ofwat's FD. However, the proposed cost of capital only partly addresses the excessive and unjustified reductions set by Ofwat.
- 9 We are broadly supportive of the direction of travel in the CMA's provisional conclusions on the individual parameters of the cost of capital, a number of which broadly align to the estimates that we provided in our Statement of Case and draft determination representations to Ofwat.
- 10 The PFs state that a move to better than midpoint estimate is required where there is uncertainty in WACC estimation, or expected returns are skewed to the downside. However, the CMA's estimate for the appointee-level vanilla WACC, in particular the cost of equity, does not strictly follow this approach when selecting a point estimate. Rather, the CMA's cost of equity is closer to the midpoint of the range derived from the market data, as some of the ranges considered by the CMA have been truncated. We ask the CMA to consider and reflect the full set of evidence on all elements of the WACC, and to align its estimates with the level of underlying uncertainty and asymmetric risk in the overall package of costs and outcomes, as it makes its final determination.

2.2 Company Specific Adjustment (CSA)

- 11 Our Statement of Case identified the lack of a CSA as a fundamental concern in Ofwat's determination. This was counter to the clear regulatory precedent set by the Competition Commission in 2010 and by the CMA in 2015 and reflects the structurally higher financing costs faced by smaller companies within the industry, with no application of a test linking this to efficiency or service levels.
- 12 We agree with the CMA's decision to correct Ofwat's decision and to reinstate the application of a CSA for Bristol Water, underlining the benefits of regulatory consistency and recognising the additional costs companies like us face. The CMA also restates that there is no clear link between the relative position of small companies within industry cost benchmarking and the efficient level of the cost of capital, and that a customer benefits test should not apply.



- 13 Whilst we support the CMA's approach to increase the cost of embedded debt by removing the outperformance wedge (for all appellants) and allowing 10bps premium to iBoxx for a notional small company like Bristol Water, the PFs do not go far enough. In section A of our response, we set out analysis demonstrating that when the wider evidence on small company yield at issuance is taken into account, there is a small water only company premium above the iBoxx index of at least 20bps, controlling for tenor, credit rating and timing of issuance.
- 14 We do not agree with the CMA's suggestion that we will face less need for a CSA on debt in future price controls. The PFs contain limited evidence and analysis to support this conclusion, which is inconsistent with the CMA stated logic that CSAs in general apply to relevant notional small company characteristics, rather than the specific actual company (in our case Artesian) debt financing. The level of CSA in the future should depend on the relevant evidence at that time.
- 15 The CMA appears to agree that small companies have a higher cost of raising debt in general, however the PFs do not apply this logic to Bristol Water's new debt financing, by incorrectly evidencing selective incidents of new debt issuance, without appropriate benchmarking to establish whether recent debt issuance was indeed 'competitive' relative to market benchmarks at the time of issuance. We have provided evidence to the contrary and ask the CMA to allow an appropriate premium on new debt to reflect the higher coupon and transaction costs associated with small scale issuance. Our analysis, set out in section A, shows that a CSA on new debt of at least 15 bps should be applied on top of the new debt allowance for a notional large company based on the iBoxx index.
- 16 The PFs provisionally dismiss our claim for a small company uplift on the cost of equity despite clear precedent in this area. The CMA has not set out why the principle should not apply at present (even if quantification of the uplift is challenging), or what has changed in terms of risk or underlying evidence, which would therefore imply that departure from established CMA precedent is warranted (notwithstanding whether the cost of equity for the industry as a whole is set correctly, or at a level higher than Ofwat's FD / DD). In its assessment of CSA on debt, the CMA emphasises the merit of upholding regulatory consistency and precedent yet it has chosen to depart from established precedent in the case of equity without offering specific reasons as to what has changed that means such departure is warranted.
- 17 As a small company, we face more concentrated equity risk which requires an uplift to the cost of equity, which should be considered outside of the arguments and reasoning the CMA has considered in setting the cost of equity which apply to all companies in the sector. A minimum equity beta uplift of 13%, consistent with regulatory precedent for a notional small company like Bristol Water, remains appropriate based on evidence as considered by the CMA in 2015.
- 18 The CMA's PFs did not appear to consider in full the evidence that small water only companies have a smaller proportion of new to existing debt financing for 2020-25. We present analysis to demonstrate that the assumption that it is not sufficient to assume that the weighting of new to existing debt financing will even out over time. We conclude that the weighting of new to embedded debt for a relevant notional company to Bristol Water should be 5:95.
- 19 It is worth noting that throughout PR19 it was recognised by all parties that the cost of capital would be revisited after business plan preparation to reflect updated market data and risk elements later in the process. Companies accepted this approach and (excluding CSA), generally



used Ofwat's estimates at the time in preparing their business plans. There remains a gap between our view on cost of debt and cost of equity between the CMA's PFs and Statement of Case once our CSA is considered. The allowed cost of embedded debt remains below our actual costs.

20 In conclusion, although the PFs restate the fundamental requirement for a premium for a small company cost of capital, the logic of the assessment and the components of the adjustments are not consistently applied. We ask the CMA to reassess the component value for our CSA allowance on both debt and equity.

3. Cost allowances

- 21 Our business plan was built around an ambitious level of cost challenge derived from a range of independent top down benchmarking and bottom up cost analysis. Our submitted business plan positioned us as a notable outlier in the sector with a Totex allowance 10% below historical levels.
- 22 Ofwat's FD set a cost allowance for Bristol Water that was £30 million below our business plan; at a level more challenging than a range of independent assessments of the industry upper quartile. The PFs only address £5m of this £30m gap and therefore leave us with a material unfunded Totex risk exposure. The scale of the remaining exposure on costs, at c. 5%, will bear negatively on both our financeability as well as on the value we are able to deliver for customers.
- 23 The PFs underestimate the level of costs required to deliver our services and outcomes in three primary areas, these are:
 - Insufficient allowance for leakage base costs we provide evidence to demonstrate that the CMA should consider the gap to median levels of industry leakage performance, as opposed to upper quartile, for companies with better existing leakage performance. In order to compare leakage performance, the CMA uses one method for normalising (leakage per km), whereas the other measure (leakage per property) is more appropriate given the inclusion of properties as a variable in the cost models. We propose an approach which ensures that the proven logic of an increasing marginal cost of leakage as it is reduced is reflected in our base cost allowances. Separately, we have identified a calculation error in the PFs. The CMA has applied its uplift to an incorrect base cost figure which results in an understatement of our required allowance.
 - Insufficient allowance for leakage enhancement we provide analysis to demonstrate that the CMA's PFs double count the efficiency challenge applied to our enhancement costs. The CMA should either apply the efficiency challenge we propose or, if the CMA were to consider that it should apply its own efficiency challenge, it should use our preefficiency enhancement investment costs.
 - A failure to take account more generally of the service cost relationship. We demonstrate this can be substantially resolved by using the latest comparative cost data from 2019/20, placing greater weight on industry costs that are moving to deliver the higher AMP7 levels of service.



- 24 Regardless of the cost service relationship, we expect that the CMA will update its modelling for the 2019/20 cost data, as to do so would make use of the most recent available data (a principle that the CMA places importance on elsewhere in the PFs).
- The PFs also assumed that the frontier shift challenge to costs should be applied from 2019/20 as the base modelling used data up to 2018/19. Updating the modelling to use the most recent data for 2019/20 would also mean that the frontier shift is now only applied from 2020/21.
- We ask that the CMA updates its assessment of our allowed costs using the latest 2019/20 industry data, which we calculate will close all of the remaining cost gap.

4. Balance of risk

- 27 In our Statement of Case we evidenced how Ofwat had introduced significant asymmetric downside risk, which did not reflect a balanced determination, and contributed towards the overall package not being financeable.
- 28 In its PFs, the CMA has partially addressed these issues through:
 - adjusting some of the ODI rates, and taking account of negative ODI RoRE asymmetry (to some degree) in the setting of the cost of capital;
 - setting cost sharing rates at 45:55 (compared to Ofwat's final determination of 40:60); and
 - removed the Gearing Outperformance Sharing Mechanism.
- 29 Overall, while this has reduced certain aspects of the negative asymmetry, the package still remains negatively asymmetric to a material degree to the extent that on a mean expected basis, Bristol Water will not be able reasonably to expect to earn its required cost of capital. Indeed, for outcome delivery incentives, the asymmetry has become more negative due to the increase in leakage penalty rates.
- 30 We note that the CMA has considered negative asymmetry in its approach to calibrating the WACC and we agree that allowing a higher WACC is an appropriate means to address the negative asymmetry arising from the framework (if the asymmetry itself is not removed).
- 31 However, in its PFs the CMA's analysis understated the degree of negative asymmetry arising from the ODI package.
- 32 For the final determinations, the CMA should remove the asymmetry from the cost sharing rates (i.e. move to 50:50) and address the remaining asymmetry through the cost of capital allowance we have proposed.

5. Financeability

33 We recognise the movement in the CMA's PFs which improves our financeability position. Although the CMA has set out an approach which partially addresses the areas of error we identified, it does not resolve the risks and consequences identified in our Statement of Case.



- 34 We agree with the CMA's overall approach to assessing financeability, which is based on a clear, market-based approach and recognises the importance of ensuring that core parameters are calibrated such that they support a financeable outcome.
- 35 The PFs leave Bristol Water in a position where our key ratios, although stronger than under Ofwat's FD, remain very weak by historical standards, and are weakly positioned relative to the guidance of credit rating agencies.
- 36 The cost of capital in the PFs has been calibrated such that the company may be able to achieve ratios that are consistent with Baa1 thresholds. A cost of capital any lower would not support a stable Baa1 rating or provide the cash buffer (debt service headroom) and equity returns commensurate with the risks associated with a package that is inherently tough.
- 37 The CMA states that the asymmetric risk implied under the ODI package is likely to result in penalties. Therefore, the expected loss resulting from asymmetric risk should be included in base cash flows and ratios in order to reflect a mean expected outcome. We present analysis that shows when the expected loss from asymmetric risk is taken into account, it results in ratios that are closer to the minimum threshold for Baa1 and reduce the cash buffer available to withstand plausible cost and performance shocks.
- 38 The CMA's downside scenario understates the magnitude of risks that Bristol Water is faced with. As well as asymmetry from the ODI package, the totex gap based on the PF provides acute risk, given the evidence we present on cost allowances and the gap to current costs. Taking both factors into account, under a set of severe, but plausible and realistic, scenarios we find that there is likely to be a very limited cash buffer to adequately manage this risk. This indicates that an increase in revenues is required to support financial resilience.



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Section A: Cost of capital

6. Summary

- 39 The PFs consider a range of different evidence across each key parameter and in general refrain from the selective and downwardly biased approach in Ofwat's FD. However, the proposed cost of capital only partly addresses the excessive and unjustified reductions set by Ofwat.
- 40 The industry WACC continues to represent a significant reduction from PR14 and the settlement remains challenging in the round, as evidenced by our financeability analysis in Section D.
- 41 The PFs state that 'aiming-up' is required where there is uncertainty in WACC estimation or expected returns are skewed to the downside. However, the CMA's estimate for the appointee-level vanilla WACC, in particular the cost of equity, does not strictly follow this approach when selecting a point estimate. Rather, the CMA's cost of equity is closer to the midpoint of the range derived from the market data, as some of the ranges considered by the CMA have been truncated.
- 42 The CMA has upheld regulatory precedent and has recognised the existence of additional financing costs for small companies. However, the PF has only allowed Bristol Water a CSA on embedded debt, and not on new debt or equity, or adjusted the new to embedded debt weighting in the cost of debt allowance for a small notional company.
- 43 In this section, we (1) set out our views on the CMA's approach to the generic WACC by parameter; and (2) submit further evidence on the existence and value of the higher financing costs (CSA) which we incur as a small company in the water sector.

7. Total market return

7.1 Summary of the CMA's approach

- 44 We agree with the CMA that "the WACC is the primary factor in the redetermination ensuring that an efficient firm can finance its functions. As a matter of principle, if the WACC is set at a reasonable level, both debt and equity investors should earn sufficient returns to cover the costs of financing".¹
- 45 In estimating the WACC, the CMA has continued to place most reliance on the historical ex post approach. Total market return (TMR) estimates are calculated using both CED/CPI and CED/RPI series, reflecting the CMA's provisional conclusion that *"both these data series have relevant strengths and weaknesses"*. The CMA then applies a range of different averaging techniques to the annual returns data.

¹ PFs, paragraph 10.58.



- 46 The CMA continues to apply long-run ex ante cross checks, using a Fama-French dividend discount model and the DMS decomposition approach. Bias adjustments are applied to these ex ante cross checks in recognition of the inherent geometric averaging in the models used.
- 47 The CMA derives a range of 5.25% to 6.25% real RPI, with a mid-point of 5.75%. A point estimate of 5.99% real RPI is selected, due to the CMA's decision to move to the 75th percentile, to reflect uncertainty in the underlying parameters and the existence of asymmetric risk considerations. In CPIH terms the range is 6.20% to 7.21% real CPIH, with a point estimate 6.95%.

7.2 Our response

- 48 We agree with the CMA's assessment that the CED/CPI series has significant flaws and that some weight should be placed on estimates derived using the CED/RPI.² In this regard, the CMA's discussion of this issue appears less biased than the Ofwat approach of placing sole weight on the CED/CPI. As the CMA explains, 40 years of the 70-year period over which CPI is used in the CED/CPI series (CED being used for 1900-1947) is based on back-cast estimates and "...it is impossible to know how accurate the figures are."³
- 49 However, whilst the CMA provisionally concludes that both CED/CPI and CED/RPI series have strengths and weaknesses and the results from both series have been taken into account, the CMA has in effect continued to place very little weight on the CED/RPI results. This is evident because:
 - (a) The range and midpoint of the CMA's results⁴ (excluding arithmetic and geometric means) using the CED/CPI series, expressed in RPI terms, is 5.20% to 6.30%, with a midpoint of 5.75%. This is almost precisely in line with the CMA's chosen TMR figures.
 - (b) The results from the CED/RPI series, on the other hand, have a range of 5.90% to 6.80% and a mid-point of 6.35%. The midpoint is therefore outside the CMA's range and most of the CMA's estimates using CED/RPI are outside of the CMA's TMR range.⁵ Figure 1 below illustrates this point graphically.

² This is consistent with our Statement of Case (SoC), Bristol Water (April 2020). 'PR19 Redetermination: Bristol Water: Statement of Case', paragraphs 266, 274.

³ PFs, paragraph 9.160(d).

⁴ PFs, Table 9-3.

⁵ Using CED/RPI estimates, the JKM MSE estimator over 20 years is within the CMA's range (5.90%). However, Blume 10 (6.6%) and 20 years (6.4%), JKM unbiased 10 (6.6%) and 20 years (6.5%), JKM MSE 10 years (6.3%), overlapping 10 (6.4%) and 20 years (6.4%) and non-overlapping 10 (6.5%) and 20 years (6.8%) are all above the upper end of the CMA's range, which is 6.25%.





Figure 1: CMA's CED/CPI and CED/RPI estimates compared to its TMR range, real RPI terms

Source: Bristol Water analysis of CMA PFs Table 9-3

- 50 We remain of the view that a range of inflation options should be considered when deriving TMR estimates, using the ex post approach. It is unclear why the CMA translates its discussion in the text that both series have merits/demerits into placing very little weight on one of the series, the CED/RPI.
- 51 In addition, the averaging approach referred to as 'non-overlapping returns' has been excluded from the CMA's range on the grounds of sample size. However, the TMR estimates derived from non-overlapping returns are important. This is because non-overlapping returns may be considered to be independent observations, resulting in TMR estimators that are assumptionfree regarding the distribution of annual returns and serial correlation. Further, it is inconsistent to exclude non-overlapping returns on the grounds of sample size, whilst also including overlapping returns. This is because overlapping returns are highly dependent data points (as they are rolling 10 and 20-year averages).
- 52 Adjusting the CMA's range for the aforementioned points results in a TMR range using the CMA's own data (i.e. all averaging techniques and both CED/CPI and CED/RPI results, given equal weight) of 5.2% to 6.8%, with a midpoint TMR of 6.0%.⁶ This is consistent with the evidence and comparable to the TMR we suggested in our Statement of Case.⁷
- 53 We note that the midpoint from the market data is also in line with the CMA's point estimate of 5.99%, real RPI. However, the CMA's point estimate relies on 'aiming-up' to the 75th percentile, whereas a TMR estimate of this size is evident from the market data, before taking into account 'aiming-up' to reflect uncertainty in the underlying parameters and the existence of asymmetric risk considerations.

⁶ In real RPI terms.

⁷ Statement of Case, page 5 suggests 9.0% nominal (which is 6.1% real RPI, assuming a flat deduction of 2.9% RPI, and 5.9% if the Fisher equation is used).



54 We agree with the CMA's approach of applying a Bias Adjustment to the ex-ante estimates and note the suite of reasons for this being the correct approach, consistent with precedent and the academic literature.⁸

8. Risk-free rate

8.1 Summary of the CMA's approach

- 55 The CMA recognises that there is not one correct benchmark for estimating the risk-free rate (**RFR**) and that the RFR is ultimately a hypothetical number.⁹ In addition, the CMA recognises that the RFR in the capital asset pricing model (**CAPM**) must strictly be a rate that market participants can borrow and lend at. On this basis, the CMA places weight on both index-linked gilts and AAA bond yields.¹⁰
- 56 The CMA did not place weight on nominal gilts, on the basis that they may be distorted by inflation risk premia and their inclusion would not materially improve the RFR estimate.¹¹
- 57 The CMA adopted 6-month trailing averages of spot yields on its chosen benchmarks, on the basis that this balanced the need to reduce volatility with the accuracy of the estimate¹² and selected an investment horizon of 20 years, in line with the 'very long' asset lives and long horizon investment decisions in the sector. ¹³
- 58 The CMA provisionally made no explicit allowance for the risk that the RFR may change over the course of the price control. In particular:
 - (a) No forward uplift was applied to the trailing average of spot yields on ILGs and AAA iBoxx indices, on the grounds that the CMA received no evidence on the effectiveness of the forward uplift at predicting the trajectory of rates.
 - (b) Whilst the BoE R* is noted as a useful, independent assessment of the long-term RFR, the most recent estimate (albeit, 2018) of +0.5% CPI does not appear to have informed the CMA's range or point estimate, on the basis that the estimate is outdated.¹⁴
- 59 The result is a range of -2.26% real RPI (-1.40%, real CPIH) to -1.68% real RPI (-0.81%, real CPIH), based on 6-month trailing averages of UK index-linked gilts (**ILGs**) and AAA corporate bonds with remaining maturity of c.20years.

8.2 Our response

60 We agree with the CMA's approach of recognising the importance of including other benchmarks in the RFR range beyond ILGs (such as including AAA bond yields into the RFR

⁸ See, for example, KPMG (March 2020). 'Estimating the cost of equity for PR19' (KPMG Expert Report), paragraphs 4.2.40 to 4.2.42.

⁹ PFs, paragraph 9.39.

¹⁰ PFs, paragraph 9.140.

¹¹ PFs, paragraph 9.110.

¹² PFs, paragraph 9.124 to 9.128.

¹³ PFs, paragraph 9.128.

¹⁴ PFs paragraph 9.111.



range). However, we remain of the view that the range should be broadened to include estimates from other benchmarks, such as nominal gilts. This is because market distortions impact all available RFR benchmarks and there is no clear reason to consider that ILGs and AAA bonds are more or less impacted by distortions than nominal gilts.

- 61 We agree with the CMA's approach of taking a longer trailing average of spot yields, than the 1month period applied by Ofwat. It is clear that a 1-month period introduces unnecessary volatility into the allowance and that periods of 6 months to 1 year are more appropriate for the purposes of setting the regulatory cost of capital.
- 62 We also agree with the CMA's approach of extending the investment horizon to 20 years. The sector is characterised by long-lived assets and therefore long-term financing, and the regulatory WACC should be consistent with this.
- 63 The approach in the PFs does not currently reflect the fact that the RFR estimate needs to hold for (at least) the duration of the price control period. Rather, the CMA estimates the RFR at the start of the price control only. This is a deviation both from companies' and Ofwat's approach in the FD. The cost of equity allowance must be sufficient for the duration of the price control because equity needs to be attracted and retained throughout the period 2020-2025. For consistency with the CMA's current 'market-driven' approach, the CMA should adopt the forward rate adjustment, which simply estimates the market's view of the RFR over the price control period, rather than the RFR as at 2020.
- 64 An alternative approach to allowing for rates to change during the price control period is to place weight on the Bank of England's 'R*', which is the Bank's estimate of the long-run equilibrium RFR in the UK. We agree with the CMA that the BoE's R* is a useful data point but note the CMA's concern that the BoE's R* is somewhat out of date. We have therefore updated the estimate provided by a model on which the BoE's R* estimate depends, using current market data. The benchmark model contained in a paper authored by Malik and Meldrum (2014)¹⁵ indicates that market expectations for long-run UK interest rates have fallen from 0.2% real CPI in August 2018, to -0.3% real CPI (-1.2% real RPI) as of July 2020. This suggests that the upper end of the CMA's range for RFR is more robust for the purposes of estimating an RFR that will prevail for (at least) the duration of the price control period.

9. Beta

9.1 Summary of the CMA's approach

65 The CMA considers a wide range of approaches in estimating the raw equity beta– estimating betas for a range of time windows (2, 5, 10 years and the 65 month period between structural breaks) and sampling frequencies (daily, weekly and monthly) and ultimately uses judgment to select a range of 0.27 of 0.32 for the unlevered beta. This range has a midpoint of 0.30 but the CMA's point estimate is 0.31.^{16,17}

¹⁵ Malik, S. Meldrum, A. (2014). 'Evaluating the robustness of UK term structure decompositions using linear regression methods', Bank of England working paper No.518.

¹⁶ PFs, paragraph 9.276.

¹⁷ PFs, paragraph 9.284.



9.2 Our response

- 66 We agree with the CMA's recognition that short-run beta estimates can lock in noise and that there is merit in placing weight on betas estimated over longer time windows. We also agree with the CMA's point estimate of 0.31, which is in line with the industry-wide asset beta we set out in our Statement of Case.¹⁸
- 67 However, we are concerned that the CMA's range:
 - (a) Includes beta estimates over a very short-run period of 2 years, which implicitly and incorrectly assumes the outturn betas are as robust as betas estimated over longer time windows. As set out in our Statement of Case and accompanying KPMG expert report, betas calculated over longer time windows simply include more data points and are therefore less impacted by temporary noise.¹⁹ Betas taken over short term time windows, on the other hand, are impacted by short term volatility and the resulting covariances do not persist over the long run (Wright et al 2018).²⁰ This can be rectified if the CMA considers the range by placing less weight on the 2-year betas.
 - (b) Includes beta estimates over a period that has been shown to contain structural breaks²¹

 in the form of the CMA's 10-year beta. We therefore suggest that the CMA considers the range by placing less weight on the 10-year betas.
- 68 Excluding the 2-year and 10-year betas from the CMA's range results in a beta range from 0.29-0.33 to June 2020 and 0.32-0.34 to February 2020. This approach therefore continues to support the CMA's point estimate of 0.31 using the data to June 2020, albeit the CMA's point estimate is closer to a midpoint. Further, if the period impacted by COVID is disregarded i.e. betas estimated to February 2020 are used, then the CMA's point estimate is slightly below the range derived from the market data.

10. Other parameters

10.1 Cost of new debt

69 A forward uplift should be applied to the cost of new debt estimate (which the CMA estimated at 10bps), in recognition that the allowance will apply for the duration of the price control period. Consistent with the rationale for applying the forward rate to the RFR, the forward uplift simply takes the market view of rates over the price control period, rather than at the start of the price control period, in recognition of the fact that new debt will be raised across the 2020-2025 period.

¹⁸ SoC, para. 307

¹⁹ Assuming the longer time period does not cover structural breaks. See SoC, para. 299

²⁰ SoC, para. 299

²¹ See Gregory, Harris and Tharyan (2020) and Indepen (2018)



10.2 Retail margin adjustment

- 70 We agree with the CMA's logic of applying the retail margin adjustment as a reduction in allowed revenues, as opposed to a percentage deduction from the appointee WACC.
- 71 However, the CMA's estimate of the adjustment appears inconsistent with previous Ofwat commissioned reports, which we invite the CMA to consider. This is because the CMA's analysis implies that a fair EBIT margin for retail is just 0.24%.²² However, Ofwat has set the allowed margin in retail at 1%, based on PwC analysis which demonstrated that the required margin to cover capital costs is between 0.55% and 1.1%. The implied retail margin adjustment by PwC is therefore 0 to 4.5 basis points.²³
- 72 The primary reason for the CMA's overestimate of the adjustment is its accounting-based approach to capital employed, which does not consider the array of factors which impact capital requirements for water retailers, including working capital and intangible assets.²⁴
- 73 The result is a counterintuitive implication from the CMA's PFs. This is because the CMA provisionally concludes that:
 - (a) capital employed in retail is ± 386 million²⁵
 - (b) The retail margin allowance continues to be £93 million²⁶
 - (c) £71 million of the £93 million retail margin is compensation for additional systematic risk, with only £22 million required to cover the return on capital of the appointee.²⁷
- 74 The implication of the above is that the WACC of a retailer, reflecting the additional systematic risk of retail activities, is as much as 24%,²⁸ which seems unlikely.

10.3 Small company premium – principle / customer benefit test

- 75 We agree with the CMA's provisional findings on the customer benefits test. There is no rationale for a customer benefits test to be applied on part of the regulatory determination and not others. Overall, Bristol Water has lower than average bills, and as set out in our Statement of Case, provides a wide range of benefits to customers.
- 76 As set out in our Statement of Case, Ofwat was wrong to apply the customer benefits test as there is no causal link between the test and the efficient level of the cost of capital, and it is inconsistent with the finance duty. It would also represent a major departure from regulatory precedent – as Bristol Water has been allowed a small company premium at every price review

²² PFs, paragraph 9.563.

²³ PwC (February 2014). 'Water retail net margins: A report prepared for Ofwat' (PwC Report), p.18. 1.1% ROCE cross-check would imply that zero RMA adjustment is required, whereas 0.59% would imply (1%-0.59%)*11bp i.e. 4.5bps.

See for example KPMG (June 2018), 'Review of credit arrangements for the non-household retail market', and the PwC Report.
 PEC Table 9-23

²⁵ PFs, Table 9-23.

 ²⁶ PFs, Table 9-23.
 ²⁷ PFs, Table 9-23.

²⁷ PFs, Table 9-23.

²⁸ 93m/386m=24%.



since 1995, including by the Competition Commission in 2010 and CMA in 2015, in the latter case with the customer benefits test being explicitly removed.

77 We agree with the CMA maintaining its position not to apply the customer benefits test. We also agree with the principle clearly set out in the PFs that *"The level of the cost of capital should be set at a level which allows a notional company to finance its activities. Having identified that the notional small water company will incur higher costs to finance its activities, we continue to expect that this should be reflected in the notional cost of capital for such a small company."²⁹*

11. Small company premium – embedded debt

11.1 Summary of the CMA's approach

- 78 In relation to embedded debt, the CMA provisionally found that:
 - For all appellants including Bristol Water, there should be no adjustment for 'outperformance wedge' relative to the iBoxx index allowance. This increased the allowance by 25bps, all else equal.
 - For Bristol Water specifically, as a small company, an additional 10bps premium above the iBoxx allowance was appropriate, to maintain regulatory consistency and to reflect the transaction costs associated with the debt issuance by smaller water companies since 2000.
- 79 The CMA explained that its decision, not to apply outperformance wedge and to allow an additional 10bps for Bristol Water in addition to the outperformance wedge adjustment, was *"in line with the CMA 2015"* analysis and appropriate for a notional small company.³⁰ Therefore, the difference in the apparent size of the CSA in the PFs (10bps) relative to the 2015 precedent (40bps) is mainly a difference in labelling (in 2015, the 'outperformance wedge' of 26bps and the premium to iBoxx of 11bps were jointly referred to as 'small company premium' by the CMA, whereas under the current determination, the CSA is considered to be solely comprised of the premium to iBoxx awarded to Bristol Water). However, in substance, the overall uplift for our embedded debt relative to Ofwat's notional allowance (for PR19) is comparable to the 2015 CMA precedent.
- 80 In assessing the appropriate CSA for Bristol Water, the CMA relied on evidence from other parties. Specifically, in relation to the premium to iBoxx for water only companies (WoCs), the CMA considered:
 - the 11bps premium to iBoxx for small WoCs found by the CMA in 2015; and
 - the 10bps premium to iBoxx found by Ofwat's consultants, Europe Economics, presented as part of the evidence in this appeal.

²⁹ PFs, paragraph 9.448.

³⁰ See CMA (2020), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations - Provisional Findings', para. 9.489.



11.2 Our response

- 81 We concur with the CMA's approach to increase the cost of embedded debt by removing the outperformance wedge (for all appellants).
- 82 In its final determination, the CMA should further consider the evidence presented below, which suggests that the premium is likely to be higher than the 10bps premium to iBoxx for a notional small company like Bristol Water found in the CMA PFs.

1. <u>The CMA 2015 premium to iBoxx of 11bps did not fully reflect evidence of small company</u> <u>debt issuance</u>

- 83 In 2015, to determine the level of the uplift needed for a small company, the CMA considered the following:
 - it carried out its own analysis on differences between the iBoxx index and large water and sewerage companies' (WaSCs) issues, which it found to average at 26bps; and
 - it adopted PwC's assessment of the premium at issue between the average yield on Artesian debt to iBoxx at 11bps.
- 84 The CMA 2015 decision therefore was not based on an assessment of the premium to iBoxx required for small WoCs, nor did it consider all the evidence available at the time. For instance, the debt service cost of the monoline insurance wrapper that allowed it to be issued rated at AAA, and other costs of accessing the programme have not been considered.³¹ In addition, the same paper by PwC cited by the CMA, which found 11bps of premium for Artesian debt against the iBoxx (26bps against the allowance which then included 15bps outperformance wedge for WaSCs), also presented a wider set of evidence on small company issuance, which showed the premium could be higher specifically:
 - based on the relevant evidence of bond issuance by WoCs, PwC found the premium above WaSCs to sit at 30bps, i.e. higher than that based on Artesian debt; and
 - separately, PwC also cited evidence from existing bank debt and from interviews with commercial banks which found that the premium for small WoCs could be between 20-40bps above WaSCs' bank costs.³²
- 85 We present below the latest evidence on yield at issuance for WoCs' debt with long tenor, and how this yield compares to the iBoxx A/BBB allowance as well as the relevant iBoxx index for the given credit rating of each issuance.
- 86 As shown in Table 1 below, the majority of the long-dated debt issued by small WoCs since 2010 was issued at a significant premium to the iBoxx index. The evidence includes our 2011 bond which was issued at a premium to iBoxx of 77 – 85bps , where the range reflects spreads relative

The structure of Artesian and cross references are in Annex 5 of our Reply to Ofwat's Response to our Statement of Case. The PwC (2014) analysis presents effective yields as 'excluding issuance costs' and makes no reference to monoline wrap costs.

³² See PwC (2014), 'Company specific adjustments to the WACC – A report prepared for Ofwat', p. 5.



to the average A/ BBB iBoxx index (77bps) vs the relevant iBoxx index (in this case, the relevant iBoxx index is the BBB index, given the credit rating of the bond, at 85bps).

87 The bonds below were included within the KPMG analysis presented in our Statement of Case, which used this evidence along with evidence from Artesian spreads at issue for the industry as a whole (as published by PwC) to calculate a premium for WoCs' debt. KPMG found that on average, when calculated against the relevant iBoxx, WoCs issued at 23-26 bps above the relevant iBoxx index given their credit rating at issuance, or 22bps against the iBoxx A/BBB allowance.³³

lssuer	lssue Date	Tenor	Index linked?	Yield at issue*	Offering Amount (£GBPm)	Credit rating	Spread to average iBoxx	Spread to relevant iBoxx**	
Affinity Water Finance PLC	04-Feb- 2013	23	No	4.50%	250 A-		-0.11%	0.06%	
Affinity Water Programme Finance Ltd	22-Aug- 2016	26	No	3.28%	85	85 A-		1.00%	
Bristol Water PLC	25-Mar- 2011	30	Yes	2.70%	40	Baa1	0.85%	0.77%	
Affinity Water Finance PLC	04-Feb- 2013	32	Yes	1.55%	190	A-	0.62%	0.79%	
South East Water (Finance) Ltd	11-Feb- 2010	31	Yes	2.53%	130	BBB	0.21%	-0.02%	

Table 1. Long-term debt issuance by small WoCs

* For Index Linked Debt, to convert to nominal debt, we use BoE implied inflation for the relevant tenor. Where implied inflation beyond 25 years is not available, we use inflation estimates at the longest available tenor of 25 years.

**Spread to 'relevant' iBoxx is calculated as the spread relative to either the iBoxx A or BBB index, as relevant based on the credit rating at issuance of the reference bond.

*** The market conditions in the early aftermath of the Global Financial Crisis were such that the yield curve was inverted, then gradually becoming of concave shape (levelling off at c20Y maturity). This means that any comparison of 30-year debt at the time is appropriate, and in cases where the yield curve was inverted, would have if anything, understated the extent of the premium.

88 In summary, the above shows that the wider evidence on small company yield at issuance, based on previous evidence provided to the CMA (specifically the work by PwC considered in earlier appeals), as well as evidence from KPMG reprinted above, supports a figure for the premium above the iBoxx index that lies above 20bps.

³³ The range reflects weighted vs unweighted average spreads, where weights are assigned based on the value of the issuance in £m.



2. Ofwat's 10bps is based on Europe Economics evidence which does not control for tenor

- 89 The CMA's decision also referenced Ofwat's 10bps premium to iBoxx estimate for small WoCs' issuance, which Ofwat claim was the basis for the 35bps CSA awarded to companies at the FD (the 35bps was comprised of 10bps premium to iBoxx for small WoCs, plus 25bps of outperformance wedge or discount to iBoxx for large WaSCs).
- 90 As part of Ofwat's submission to the CMA, Ofwat dismissed their own evidence of a 10bps premium to iBoxx for small WoCs as not being relevant for the CMA process, and instead proposed an alternative approach for calculating the CSA which found a smaller premium of 5bps. Notwithstanding our significant concerns for the alternative approach proposed by Ofwat for calculating the CSA, Ofwat's basis for dismissing the original Europe Economics analysis which found a 10bps premium to iBoxx for small WoCs (or a 35bps total premium including outperformance wedge), as used for the FD, was that it was not controlling for tenor. In fact, in its response Ofwat specifically stated:

"The majority of the 35 basis point uplift we allowed for two small water companies at final determinations is due to the longer average tenor of debt issued by small companies compared to the iBoxx. Once tenor is controlled for, the residual higher yield at issuance attributable to small size and other factors is approximately 5 basis points."³⁴

- 91 It is clear, as recognised by Ofwat, that tenor should be controlled for when assessing the impact of CSA, in addition to controlling for credit rating and timing of issuance (although Ofwat's alternative analysis which found a smaller premium of 5bps, whilst controlling for tenor, failed to control for credit rating).
- 92 Separately, the CMA's PFs, in assessing the existence of an outperformance wedge, concluded that it was appropriate and indeed necessary to control for both tenor and credit rating when assessing differences in pricing.³⁵
- 93 Given that both the CMA and Ofwat consider that controlling for tenor is appropriate when assessing pricing of company debt against benchmarks, the CMA should dismiss the Europe Economics analysis which incorrectly suggests 10bps is an appropriate estimate of the premium to Index for small WoCs, as this is not based on analysis that controls for tenor.
- 94 For the avoidance of doubt, we do not agree with Ofwat's alternative evidence, also based on analysis by Europe Economics, which whilst controlling for tenor, fails to control for credit rating.36
- 95 The analysis of CSA should be based on a robust assessment that controls for both tenor and credit rating (as well as for timing of issuance, through the use of spreads analysis). In the

³⁴ See Ofwat (2020), 'Reference of the PR19 final determinations: Response to Bristol Water's statement of case', p. 110.

³⁵ See PFs, paragraph 9.353.

³⁶ Ofwat's alternative estimate of 5bps was communicated in a spreadsheet by Europe Economics named 'Figure 4.1 Table 4.1 ...'. In this spreadsheet, Ofwat presents the alternative analysis by Europe Economics which is based on assessment of spreads relative to gilts. Whilst this analysis controls for tenor, critically it does not control for credit rating. Our response in relation to why this analysis should be dismissed as well is set out in Bristol Water (June, 2020), 'PR19 Redetermination

Bristol Water: Reply to Ofwat's further submission' and Bristol Water (May, 2020), 'PR19 Redetermination Bristol Water: Reply'.



previous section, we presented evidence that when all controls are applied, the premium to iBoxx for small WoCs is at least as high as 20bps.

11.3 Conclusions on CSA embedded debt

96 In summary, we present above that the wider evidence on small company yield at issuance supports that small WoCs issues at a premium above the iBoxx index of at least 20bps, when the premium is calculated based on analysis that controls for tenor, credit rating and timing of issuance. Ofwat's own submission to the CMA dismissed evidence (from their own consultants EE) that identified a smaller premium to iBoxx of 10bps based on analysis that did not control for tenor. The alternative analysis presented by Ofwat is flawed, because whilst controlling for tenor, it fails to control for credit rating. The CMA should consider the range of evidence presented to it, including our evidence on small bond issuance presented above, as well as wider evidence provided by others (notably PwC at PR14) which found the premium to be higher than 10bps when a wider range of evidence is considered.

12. Small company premium (CSA) – new debt

12.1 Summary of the CMA's approach

97 The CMA has provisionally not found the existence of CSA / small company premium on new debt for Bristol Water on grounds that it appears that we can raise new debt on a "suitably flexible and competitive basis".³⁷ This view was based upon our issuance of 10-year bank facilities in 2018 at rates cited by the CMA of 2.61% and 1.58% that, when compared to the average iBoxx A/BBB 10+ index value for 2018 of 3.31%, appeared 'competitive'. This led the CMA to conclude that we are "clearly able to raise small scale (by industry standards) financing at shorter terms and at lower prices" relative to the cost of new debt benchmark for the allowance.

12.2 Our response

- 98 As a small company, we cannot achieve the same rates as those achievable by larger companies, regardless of what debt financing strategy we choose (or are able) to pursue. This means that even in instances where we manage to access debt capital markets at small scale and for short(er) duration (relative to industry standards), we would not be able to achieve the same pricing as that which would be achievable by a large company issuing at the same time, instruments with similar tenor. Therefore, there must be a company specific adjustment to the cost of new debt for small companies to ensure that they can adequately finance their functions.
- 99 The index benchmark cited by the CMA provides the appearance that we can raise new debt on a flexible and competitive basis, but closer consideration of our 2018 refinancing in comparison with the appropriate benchmark makes it clear that this conclusion is not

³⁷ PFs, paragraph 9.483.



correct.³⁸ It is important that this provisional finding is reconsidered as it has a fundamental bearing on our ongoing ability to finance our future operations.

- 100 Our 2018 refinancing exercise comprised of loans of shorter duration than the index benchmark for setting the Cost of debt allowance used by the CMA. Because of this difference in tenor, the rates of these loans are not comparable to the iBoxx A/BBB 10+ benchmark as the latter has longer duration of c. 20 years (and therefore higher term premium priced into the yield). Therefore, the iBoxx A/BBB 10+ benchmark is not an appropriate reference point for determining whether our loans were competitively priced at the time of issuance.
- 101 In this section we present evidence that when the pricing of our 2018 debt is compared to relevant benchmarks of the same tenor and credit rating issued at the time, our competitively and efficiently raised loans are evidently more expensive.

1. Our recent bank debt is more expensive than relevant market benchmarks

102 We present the structuring and pricing of our SunLife and ING loans issued in 2018 and compare them to relevant market benchmarks.

1. SunLife loan

Structuring and pricing



Relevant iBoxx benchmarks

105 At the time when the SunLife term loan was issued, we were rated by Moody's at Baa1 (BBB by S&P). This means that to conclude whether the loan was competitively priced, we would need to consider relevant reference benchmarks with tenor of close to 10 years and credit rating of Baa1.

³⁸ The CMA has also mistakenly cited a rate of 1.58% for our £50m facility, the applicable rate (from our 2018/19 Annual Report) for this floating rate debt facility is 1.95%.



- 106 As a first step, to approximate the tenor of 10 years for our loan, we consider the following benchmarks:
 - The iBoxx 7-10-year family of indices, selecting the indices with rating A and BBB. The average tenor of these benchmarks is just above 8 years.
 - The iBoxx 10-15-year family of indices, selecting the indices with rating A and BBB. These indices have an average tenor of just under 12 years.
- 107 Blending these indices would therefore result in an average tenor that is close to 10 years.
- 108 As a second step, we consider the underlying composition of the iBoxx A and BBB family of indices, to select the appropriate weighting that would reflect Baa1 credit rating.
- 109 Table 2 below shows the underlying composition of the iBoxx A and BBB indices and the specific weights on individual sub-notches within the rating.

	7 - 10, A	10 - 15, A	
A1	5.1%	12.2%	Baa1
A2	22.0%	16.4%	Baa2
A3	62.4%	53.7%	Baa3
Baa1	4.8%	10.7%	N/A
N/A	5.7%	7.0%	A3
			Ba1
			NR
	100.0%	100.0%	

Table	2.	iBoxx	composition
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	7 - 10, BBB	10 - 15, BBB
Baa1	47.0%	47.4%
Baa2	32.8%	36.4%
Baa3	14.8%	2.3%
N/A	5.4%	4.7%
A3	0.0%	4.1%
Ba1	0.0%	3.1%
NR	0.0%	2.0%
	100.0%	100.0%

- 110 As shown in the table above, the iBoxx A index has a significantly lower weight on issues above its central tendency at A3 (combined weight of less than 30% for A1 and A2 rating) relative to the weight of issues below the central tendency at Baa1 in the BBB index (combined weight of c 42 - 47% for Baa2, Baa3 and Ba1 ratings).
- 111 The histogram shown in Figure 2 below illustrates the relative weight placed on bonds by credit rating in an equally weighted average of the iBoxx 7-10 and 10-15-year A/BBB indices. It is clear that the central tendency of this distribution is at the A3 / Baa1 rating. However, at the tail, there is considerably higher proportion of Baa2/Baa3 debt compared to A2/A1 debt. This distribution is therefore not symmetric, containing greater weight on bonds with lower rating relative to the central tendency than on bonds with a higher credit rating.



112 Critically, it is generally well understood in corporate finance that risk and pricing is not linear, such that the difference in pricing for high quality bonds (e.g. the difference in yields of say an A1 and A2 rated bond) is not the same as the difference in pricing at lower credit rating (e.g. between Baa2 and Baa3).⁴⁰ In fact, premia increase as the credit rating deteriorates, such that the yield premia at Baa2, Baa3 and Ba1 ratings (relative to the central tendency) are greater than the discounts at A2 and A1 credit rating. This alone means that the average yield across these indices will not accurately reflect the average credit rating, even if the distribution were perfectly symmetric (which it is not). This further exacerbates the impact from the unbalanced distribution of bonds within the indices.



Figure 2. iBoxx: Bond's weighting by credit rating

113 Due to all of the above, the appropriate benchmark for the SunLife loan, given our Baa1 credit rating at the time of issuance, would be one that assigns 2/3rds weight on the A index family and 1/3rd weight on the BBB index family (henceforth the 'blended iBoxx A /BBB 66/33 index'). This combination offsets the impact from greater premia and greater weight at the lower notches within the BBB rating. This combination also results in a tenor of close to 10 years which closely matches the term of our loans.

Comparison of the SunLife loan pricing relative to the iBoxx A/BBB 66/33 benchmark



⁴⁰ This has been recognised by Aswath Damodaran. Damodaran estimates that the difference in spread between Baa2/BBB and A3/A- is 0.34%, whereas the difference in spread between Baa2/BBB and Ba1/BB+ is 0.44%, under the latest available data as of January 2020. See data table available at: <u>http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ratings.htm</u>. S&P Global's analysis also shows that changes in spreads from one grade to another are bigger as rating drops toward the lower end of rating grades. See S&P (2019), 'Credit Trends: The Cost of a Notch', Chart 1: 'Spreads increase as rating drop, and the largest gaps are between investment grade and speculative grade and between the lowest speculative-grade ratings'. Available at: <u>https://www.spglobal.com/en/research-insights/articles/credit-trends-the-cost-of-a-notch</u>.





Table 3. Comparison between SunLife loan margin and iBoxx margin





2. ING loan

Structuring and pricing







- 118 Because the loan has a variable rate comprised of a time-varying margin and underlying reference benchmark, the expected payment over the life of the loan varies, and the loan coupon is therefore not directly comparable to fixed rate debt instruments.
- 119 To compare the loans, we therefore calculate the implied annualised fixed rate, at the time when the loan was executed (14th June 2018), using the 6-months LIBOR curve on that date, and the margin structure as set out above. The implied nominal fixed rate on the pricing date, as implied by the expected variable cashflows as of the time when the loan was issued, was .⁴¹

Relevant iBoxx benchmarks

120 As was the case with the SunLife loan, this loan was issued with a 10-year tenor (principal payable upon maturity) and at the time we were also rated Baa1 by Moody's (BBB by S&P). Therefore, the iBoxx benchmarks used for the SunLife loan are also appropriate for the ING loan.

Comparison of the ING loan pricing relative to the iBoxx A/BBB 66/33 benchmark



⁴¹ To calculate the annualized implied fixed interest rate payable on this loan, we set up the cashflows under the variable expected 6 months LIBOR + margin schedule priced as of 14th June 2018, and then calculate the IRR using the principle value of the loan and the floating rate cashflows.



3. Alternative benchmarks for the SunLife and ING loan prices

- 123 Below we present an alternative benchmarking approach to the ING and SunLife loans relative to comparable water bonds issued around the same time.
- 124 Based on the information shown in the sections above, the margins for credit risk priced into our loans were as follows:



- 125 To explore whether these loans were competitively priced at the time, ideally we would be able to compare the margins above to other water sector benchmark bonds (or loans) issued around the same time, i.e. over the first 6 months of 2018, and with the same pricing characteristics i.e. 10-year tenor and Baa1 credit rating. However, such narrow search considerably restricts the set of available benchmarks. Therefore, we broaden the search to include a slightly wider sample of bonds, with similar characteristics and reflective of the broader market conditions around 2018, as follows:⁴²
 - (a) tenor at issue of 5 to 15 years;
 - (b) credit rating at issue of strong investment grade;
 - (c) issue date between 2017 and 2019;
 - (d) issued in GBP;
 - (e) fixed bonds (excluding ILD or floating rate debt); and
 - (f) bullet bonds without embedded options.
- 126 The analysis identified 10 bonds with the relevant criteria, whose pricing data is shown in Table 5 below. For all bonds, we show the pricing detail (coupon, yield at issue), and then we calculate spreads relative to the relevant gilt rate that matches the tenor of the bond.
- 127 The sample includes a wide range of bonds, issued over the wider period before and after our loans were issued, with better (A-) as well as worse (BBB+/negative) investment grade rating relative to ours at the time, and with lower (5-year) as well as higher (14-year) tenor. If our loans had been priced competitively, we would have expected to see some spreads above and others below our average. However, what we observe is that the vast majority of bonds were issued at a considerably lower spread to the relevant gilt rate than our loans. Specifically, we also observe that:

⁴² Following filtering for bonds that either do not have a credit rating of solid investment grade i.e. are at BBB/negative or below, have no credit rating, or are missing data, we arrive at a sample of 11 bonds.



⁴³ We note that whilst the underlying market conditions, as reflected by the general level of interest rates, might have moved significantly over the 3 year period, we would expect spreads to be more stable, as they reflect the additional business /default risk of company debt. See S&P analysis which demonstrates that investment grade spreads around 2017 – 2019 were broadly stable: <u>https://www.spglobal.com/en/research-insights/articles/credit-trends-the-cost-of-a-notch</u>. We acknowledge, however, that there will be variation in the data, and that spreads might also vary with tenor. The evidence presented in Table 5 is consistent with this.





129 We invite the CMA to further consider this evidence in its final determination, and appropriately reflect a small company premium on new debt, as is evidenced in the data.

Table 5. Margins on bonds issued in the water sector over 2017 – 2019 with strong investment grade rating and tenor of 5 to 15 years

						RfR		Spread		
lssuer	Issue Date	Tenor	Credit Rating	lssue Price	Coupon	Yield at Issue	Spot	Avg (5-day)	Spot	Avg (5-day)
Northumbrian Water	05/10/2017	10.0	BBB+	98.54	2.38	2.41	1.43	1.40	0.98	1.01
Wessex Water	17/09/2019	10.0	BBB+	99.53	1.50	1.51	0.65	0.66	0.86	0.85
Thames Water Utilities	24/01/2017	7.0	BBB+/NEGATIVE	99.37	1.88	1.89	1.03	1.04	0.86	0.85
Thames Water Utilities	24/01/2017	15.0	BBB+/NEGATIVE	99.25	2.63	2.64	1.88	1.90	0.77	0.75
Anglian Water	10/08/2017	8.0	A-/NEGATIVE	99.46	1.63	1.63	0.86	0.90	0.77	0.74
Angian Water	26/10/2018	11.0	A-	99.26	2.75	2.77	1.43	1.52	1.34	1.25
Severn Trent Utilities	04/12/2017	5.0	BBB+	99.89	1.63	1.63	0.79	0.80	0.83	0.82
United Utilities Water Finance	14/02/2018	7.0	A-	99.70	2.00	2.01	1.40	1.38	0.60	0.62
United Utilities Water Finance	12/02/2019	12.0	A-	99.79	2.63	2.63	1.36	1.34	1.27	1.29
United Utilities Water Finance	03/07/2019	14.0	A-	98.55	2.00	2.03	1.03	1.11	1.00	0.92
AVERAGE						0.93	0.91			

Note: The yield at issue above is calculated as the current yield at issue. Use of the excel yield formula would produce slightly higher average spread by c7bps, which does not change the conclusions and implications from the analysis above.

Transaction costs on bank debt are significant relative to our small issuance

1. Fees on term loans







2. Fees and refinancing risk on revolving credit facility





12.3 Conclusions on CSA new debt

- 140 The above showed that when compared to the pricing available to large companies (based on iBoxx A/BBB index data which reflects the tenor and credit rating of our issuance), we are unable to achieve financing at the same price and incur at least 10bps higher coupon costs than the relevant comparable benchmarks.
- 141 Separately, the transaction costs associated with our loans are considerable, and amount to notably more than the 10bps assumed by the CMA / Ofwat for large issuance. We estimated that for our ING loan, we incurred transaction costs at bps, excluding the cost of carry fees which come in addition to these estimates.



- 142 Our revolving credit facilities provide a short term liquidity lifeline for the business, but they involve significant refinancing risk (given that the commitments are not firm) and incur significant transaction costs including utilisation fees, commitment fees and arrangement fees, which makes reliance on these funds very expensive. The transaction costs associated with these small issuances also make frequent issuance of small scale debt uneconomic for us as a business.
- 143 Given the evidence set out above, the CMA should reconsider its provisional finding on new debt and allow an appropriate premium on new debt to reflect the higher coupon and transaction costs associated with small scale issuance.
- 144 The value of the CSA on new debt should reflect the additional cost expected for a relevant notional small water company, with a conservative estimate of 15bps based on the evidence we present in sections 1.4 (conservative estimate of 10bps of premium on coupon rates) and 1.5 (5bps for excess transaction costs above the CMA's allowance). These figures are conservative estimates of the minimum additional costs we face on new debt, outside of the cost of carry.

13. Embedded to new debt ratio

13.1 Summary of the CMA's approach

- 145 The CMA provisionally found that there was no need to adjust the notional new to embedded debt ratio, despite the evidence that all small WoCs have a lower proportion of new debt relative to embedded debt over AMP7.
- 146 In making this decision, the CMA appears to acknowledge Ofwat's argument that the weights on new debt will 'average out' over time, which would imply the allowance is correct 'on average' over repeated price controls (despite noting that the argument is predicated on the level of interest rates staying low for extended period of time).
- 147 The CMA decision also notes that our testimony was that we refinanced about a third of our debt over PR14, well above the notional new debt weight at the time, which the CMA interpret as evidence that small companies do not have systematically higher or lower weights of new debt relative to the industry (and relative to the allowance).
- 148 The CMA decision also notes that the amount of new debt issued in a particular regulatory period are *"within management control"*.⁴⁴

13.2 Our response

149 The approach adopted by Ofwat and provisionally followed by the CMA in the PFs is wrong. As a small company, our issuance is lumpy and as such, in different regulatory periods we may have considerably higher or lower weights on new (vs embedded) debt, relative to the industry average.

⁴⁴ See PFs, paragraph 9.486.



- 150 The CMA should reconsider the 'weights average over time' argument presented by Ofwat, because even if this is true over subsequent price controls, whether we end up out- or underperforming the cost of debt allowance is not just a function of the weights, but also of the prevailing interest rates (on new and embedded debt) prevalent at the time. For example:
 - Bristol Water (like other WoCs) is significantly under-performing on the cost of debt, because it has much higher embedded debt weight than the allowance, and embedded debt is more expensive than new debt under the current market conditions;
 - however, in subsequent periods, Bristol Water (like other WoCs) may have a higher weight on new debt when new debt rates might turn out to be higher (e.g. this could plausibly happen in AMP7 as monetary policy QE unwinds). So in the future, Bristol Water may have a higher new debt weight when new debt is expensive (relative to the embedded debt) again ending up on the 'wrong end of the allowance', even if the weights balance; and
 - small companies in general have lumpy debt profiles driven by the investment and refinancing needs, which means that management has limited control over the amount that a small company like Bristol Water can issue. We have limited ability to control our capex requirements or time debt so that it falls due for refinancing at a point in time when market rates might be favourable.
- 151 The refinancing of existing debt is not the only material factor that affects the lower proportion of new debt. The water only companies, and in particular the smaller and geographically connected companies, generally have better resilience in water supplies and better drinking water quality (CRI). The CMA will be aware of the larger water resilience schemes, and the challenges to wastewater of sewer flooding and increasing expectations of river quality. Bristol Water had by far the lowest enhancement share of totex at PR19,⁴⁵ as an illustration of this point. Whilst it is possible that this could change with future Government policy towards the industry, this would appear to be unlikely enough that it is reasonable to assume that the water service, and particularly small connected area companies, will have lower future enhancement expenditure than WaSCs. Accordingly, the evidence indicates that this should be reflected in the new:embedded debt ratio that applies to Bristol Water.
- 152 With a common new to embedded debt weight this provides an advantage to the WASCs generally over the WOCs because of WASCs higher RCV growth. Those companies with higher refinancing requirements because of RCV growth, in the lower interest rate environment than has prevailed, get an effective benefit to their cost of capital.
- 153 For these reasons, the CMA should reconsider the new: embedded debt ratio and adjust the weights to reflect the appropriate weights for a small company in the sector. As stated in our Statement of Case, small companies are expected to issue 0-10% of new debt over AMP7, therefore the average value at 5% is appropriate.⁴⁶

⁴⁵ See references in Statement of Case, Annex 4, paragraph 63.

⁴⁶ See Statement of Case, paragraphs 228 – 236.



14. Small company premium (CSA) – equity

14.1 Summary of the CMA's approach

- 154 The CMA has provisionally dismissed our claim for small company uplift / CSA on equity on the following grounds:
 - (a) the operational gearing measures are very volatile and should be considered on a caseby-case basis;⁴⁷
 - (b) in the case for Bristol Water, there is no evidence that operational gearing adjustments are needed at this stage because:
 - transaction premia for small WOCs indicate that small companies have been purchased at significant premia to RCV, which indicates that there is no material uncompensated systematic risk;⁴⁸
 - due to the proposed point estimate on the cost of equity (**CoE**), CoE now is higher than that set in the Ofwat DD and FDs, which now makes the adjustment unnecessary as the company is financeable under the CoE proposed in the CMA's PFs.⁴⁹

14.2 Our response

155 The section below sets out our response to the CMA's PFs on this issue.

Difficulty with quantifying the operational gearing adjustment does not mean the issue does not exist

- 156 In its PFs, the CMA explains that measures of operational leverage are very volatile, and as a result a set of measures appropriate for Bristol Water might not be appropriate for another company. Therefore, the CMA reasons operational leverage should be looked at on a case-by-case basis.
- 157 Although as recognised by the CMA in its 2015 redetermination for Bristol Water, operational leverage metrics are volatile, and it is difficult to come to a single methodology for an appropriate adjustment that would work for all sectors, or indeed for all companies within a sector this nevertheless did not prevent the CMA at the time from applying an uplift based on a set of measures that it considered where appropriate.⁵⁰ We have proposed to use the same measures of operational leverage as those considered by the CMA in 2015, and the current

⁴⁷ See PFs, paragraph 9.531.

⁴⁸ See PFs, paragraphs 9.526 – 9.527.

⁴⁹ See PFs, paragraph 9.531.

⁵⁰ As stated in CMA (2015), 'Bristol Water plc – Final Determination - Appendix 10.1: Cost of Capital', para. 127: "Although there is uncertainty over the scale of any uplift, and we agree that calculating a single value is difficult, we were not persuaded that zero is a suitable point estimate for the uplift".



decision does not explain why those are in any way inappropriate or inadequate for this cycle of redeterminations.

- 158 The fact that operational leverage (and an appropriate adjustment for the additional risk it creates) is difficult to measure, does not deny the principle, grounded in standard finance theory, that higher operational leverage implies greater systematic (exacerbated beta) risk. The PFs do not state whether the principle applies and therefore whether an adjustment ought to be applied as a matter of principle (notwithstanding the difficulty in quantifying this impact on risk and beta).
- 159 The CMA has not set out why the principle should not apply at present, or what has changed in terms of risk or underlying principles, which would therefore imply that departure from established CMA precedent is warranted (notwithstanding whether the cost of equity for the industry as a whole is set correctly, or at a level higher than Ofwat's FD / DD). In its assessment of CSA on debt, the CMA emphasises the merit of upholding regulatory consistency and precedent yet it has chosen to depart from established precedent in the case of equity without offering specific reasons as to what has changed that means such departure is warranted.
- 160 The fact that we have higher operational leverage means that we have exacerbated, or concentrated equity risk, such that any downside shock has greater impact on our equity returns when compared with the impact the same shock would have on other larger companies.⁵¹
- 161 In our Statement of Case⁵² we set out an alternative approach to purely relying on operational gearing in support of our small company notional cost of equity evidence based on RoRE ODI, cost and financing skew. This has a link to the operational gearing evidence we presented for the CSA cost of equity uplift, and demonstrates that cost shocks and ODI penalties both have greater impact on Bristol Water than on other larger companies (the analysis refers to the listed companies). The PFs reference this analysis in the section that summarizes our submission,⁵³ but the analysis does not appear to be acknowledged in the section that sets out the CMA's early conclusions on whether a CSA on equity is needed.
- 162 In the Balance of Risk section of this response, we demonstrate based on a RoRE assessment that ODI and cost risk skew remains an issue for small companies in the regulatory framework, even under the CMA's PFs.
- 163 Further support for the principle of a relatively small RCV resulting in higher cost of capital was recognised in a recent cost of capital assessment as part of the water draft determination for the Utility Regulator Northern Ireland:

"Holding all other things equal, shareholders in a regulated company with a small RAB/profit relative to ongoing costs are likely to suffer proportionately more when downside shocks occur (and gain more following upside events) in comparison to shareholders in firms whose RABs/profits are large relative to ongoing costs.

⁵¹ See Bristol Water (2020), 'Bristol Water – Statement of Case', paragraph 254.

⁵² See Bristol Water (2020), 'Bristol Water – Statement of Case', paragraph 718.

⁵³ PFs, paragraph 5.911.


"This higher potential volatility in profits makes companies with high 'operational gearing' more risky in the eyes of shareholders. Consequently, a firm with a small RAB would not have the same cost of capital and would not seek the same return as a company with a large RAB. It would instead need to factor a higher cost of capital upfront into its charges".⁵⁴

164 Therefore, the CMA should reconsider the evidence and this principle or offer a clear articulation as to why it considers the principle does not apply at present, which would merit departure from established regulatory precedent.

MARs on their own cannot provide conclusive evidence on CoE for small companies

- 165 The only evidence that the CMA appears to present against operational gearing adjustment is Ofwat's argument that small companies have transacted at premia to RCV without CoE adjustments, which must mean that there is no material systematic risk that has not been priced in, Ofwat asserts.
- 166 The endorsement of this argument by the CMA is surprising given that in the 2015 redetermination, the CMA clearly recognized that "*in practice, there are a number of reasons why investors may value assets at figure greater than that implied by the RCV*", ⁵⁵ a statement which clearly accepts that market / investor valuations are affected by a myriad of factors which need to be understood before anything conclusive can be said about the appropriateness of the allowed cost of equity.
- 167 As we have argued in our previous responses,⁵⁶ transaction / investor premia could reflect, amongst other:
 - (a) expected outperformance on totex or debt financing;
 - (b) possible outperformance / rewards on ODIs;
 - (c) valuations of unregulated businesses, if applicable;
 - (d) assumptions about allowances beyond the regulatory period where those are known / published, including on WACC, costs, regulatory mechanisms, asymmetry, RCV growth and macrofactors such as inflation and interest rates;
 - (e) any 'control premia' for private majority take-overs.⁵⁷
- 168 Any of the assumptions listed above could have contributed to a transaction premium that more than offsets the under-remuneration of overall equity risk in the CoE allowance. Without decomposition of the transaction valuation, and without clear understanding of the underlying

⁵⁴ See First Economics (2020), 'PC21: NI Water's Cost of Capital - Prepared for the Utility Regulator', p. 5. <u>(accessed at https://www.uregni.gov.uk/sites/uregni/files/media-files/UR%20PC21%20DD%20Annex%200%20-%20Cost%20of%20Capital%20%28First%20Economics%29%2001.00%20Published.pdf</u>)

⁵⁵ See CMA (2015), 'Bristol Water plc – Final Determination' para. 10.208.

⁵⁶ See Bristol Water (May 2020), May Response, pg 41, section (v).

⁵⁷ See Aswath Damodaran (2005), 'The value of control: implications for control premiums, minority discounts and voting share differentials'.



assumptions that could contribute to market valuation higher than RCV, it is impossible to make conclusive statements about the adequacy of the cost of equity allowance.

169 In light of the uncertainties raised we ask the CMA to revisit this evidence, and acknowledge that there is no reason to depart from the precedent in the 2015 redetermination, which found that these transaction premia cannot could not be used as conclusive evidence on the pricing of risk and the appropriateness of the cost of equity, for small or large companies in general.

Additional equity uplift is not needed because 'the company is financeable without it'

- 170 The CMA also suggests that it would now not be appropriate to award a higher cost of equity for Bristol Water given the CMA PFs considerably increase the allowed Cost of Equity relative to Ofwat's determination, and given that we are financeable under this revised cost of equity allowance. The CMA also states that its PFs are derived through 'aiming up' on the CoE, to reflect uncertainty in the underlying parameters and the existence of asymmetric risk, which makes additional adjustments for operational gearing redundant.
- 171 We note that the reasons for our request for operational gearing adjustment are that as a small company, we require additional equity buffer to withstand downside risk than what would be considered appropriate for a large company whose profits are higher in absolute terms. We consider appropriate the CMA findings that the CoE should reflect 'aiming up' to accommodate uncertainty and asymmetry in the price settlement. However, all of those issues are common for all companies, and should be considered outside and separate of our need for operational gearing adjustment.
- 172 The CMA also states that we are financeable under its PFs. However, its financeability analysis makes no mention of equity financeability, and instead focuses on whether we can achieve ratios consistent with comfortable investment grade rating, and impact on rating under downside scenarios. Both of these are debt financeability concepts.
- 173 We invite the CMA to consider the impact on ratios from totex and ODI downside risk as well as our equity financeability (RoRE analysis) as set out in section Annex 2. Our assessment demonstrates that the settlement is challenging under the provisional finding and that there is asymmetric downside skew in RoRE which is more pronounced for Bristol Water as a small company (relative to larger comparators), due to operational leverage, i.e. the fact that our equity risk is more concentrated given our small RCV (and resulting thin margin). The analysis in section 14 continues to support our argument that operational gearing adjustment on equity is needed even under the CMA's PFs.

14.3 Conclusions on CSA on CoE

- 174 Given the evidence set out above, the CMA should reconsider its provisional finding CSA cost of equity uplift to reflect higher operational gearing, or articulate what change in circumstances, or new evidence it has considered to justify departure from its own regulatory precedent.
- 175 We do not consider that premia to RCV paid in certain small company transactions presented by Ofwat constitute any bases to claim that equity risk in previous price settlements has been



adequately priced or otherwise. As recognized before by the CMA, transaction premia to RCV could be the result of a myriad of factors and assumptions that drive valuations, so these cannot be used as conclusive evidence on the pricing of risk and the appropriateness of the cost of equity alone, for small or large companies in general.

176 We present evidence that a minimum equity beta uplift of 13% consistent with regulatory precedent for a notional small company like Bristol Water remains appropriate.



Section B: Cost allowance

15. Summary

- 177 In our business plan (and summarised in our Statement of Case), we set out an extensive body of evidence that we used in ensuring that the costs in our plan were efficient. This included both top-down and bottom-up assessments. Our plan had 10% less totex than historical levels, while delivering a step change in service performance across a number of key measures. In total, Ofwat's final determination was £30m lower than our plan. The CMA's PFs only slightly close this gap, by £5m.
- 178 There are a number of aspects of the CMA's PFs that concur with our Statement of Case, including:
 - Acknowledging that maintaining leakage at lower levels results in higher costs being incurred, which aligns to both the top down and bottom up evidence that we have considered.
 - Setting an efficiency challenge in line with the upper quartile benchmark, which is in line with regulatory precedent and the broader context of the approach to cost assessment.
 - Setting a frontier shift assumption within the range that is implied by the evidence (albeit at the top of that range).
 - Allowing our cost claim relating to the Canal and River Trust payments in full, aligning with our analysis and regulatory precedent.
- 179 However, these positions do not address the full extent of the cost gap. The primary reasons for this are:
 - Insufficient allowance for leakage (c. £6m of the cost gap). While the CMA recognises that maintaining leakage at lower levels results in higher costs, in the application of its analysis it has only allowed an additional allowance for levels of leakage that go beyond the industry upper quartile. This provides insufficient allowance for companies like Bristol Water at the frontier of leakage, as the base cost models only recognise an industry average level of leakage performance. The CMA has also used a measure of normalising leakage that is inferior to other approaches and understates the strength of our comparative performance.
 - The CMA has not recognised the additional costs associated with Bristol Water's higher levels of service performance, but the issue is confirmed with 2019/20 cost and performance data (c. £25m of the cost gap). As detailed in our Statement of Case, there are a number of areas where we are stronger performers than the industry average resulting in higher base costs. This intuitive link is recognised in the PFs, but we acknowledge is difficult to quantify. However, this linkage between costs and service is now also be evidenced by the recently published 2019/20 data, which shows companies' costs increasing as service levels improve. Based on our analysis (see Annex 1), 2019/20 shows clear evidence for the water service that costs are increasing because of the need



to hit new and more challenging performance commitments. The best way for the CMA to reflect this evidence is to use the latest cost data in its analysis and model base costs of the five-year 2016-2020 period. This also is consistent with the CMA's preference for using the latest available data

- 180 We recognise the extensive analysis the CMA has carried out in a relatively short period of time and consider that if the above two issues were addressed for the final determinations, the CMA will have determined a robust assessment of costs for Bristol Water, which would be challenging while still being a balanced reflection of the efficient costs required to deliver the set performance levels.
- 181 The provisional package results in a reduction in costs significantly beyond what is supported by our top-down and bottom-up assessments and represents a 14% reduction in totex relative to historical levels.

16. Leakage

182 The CMA has considered base and enhancement costs separately. We have therefore structured our response accordingly.

<u>Leakage – base costs</u>

- 183 The CMA has correctly recognised that in order to maintain lower levels of leakage, companies need to spend more money.⁵⁸ This is consistent with the information we provided in Annex 3 of our reply to Ofwat's response to our Statement of Case.⁵⁹
- 184 The CMA has adopted an approach of allowing high performing companies a share of their base leakage costs as an additional cost allowance, based on their relative performance. However, the implementation of the stated approach contains three issues.
- 185 First, the CMA states that it has based leakage performance on cubic metres of leakage per km of main. This is only one measure of leakage performance. Another widely used measure is leakage per property. The industry convention is to consider both measures when comparing leakage performance⁶⁰.
- 186 In this context, the per property measure is the more appropriate measure to use, as four out of five of the base cost models include property numbers as an explanatory variable, whereas only one of the models includes length of main. It is these cost models that the additional leakage cost allowance is being made in relation to. Therefore, if only one of the metrics were to be used, there is more justification to use the per property measure. The per property measure also provides the closest proxy for the amount of water supplied into the system.

⁵⁸ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 8.42.

⁵⁹ Further, in RFI018a we provided information showing that as leakage levels have reduced up to 2019/20, base costs have accordingly risen compared to the position at the time of submitting our business plan.

⁶⁰ For example, on the industry performance comparison website Discover Water: https://discoverwater.co.uk/leaking-pipes



- 187 In addition, as Isle Utilities shows (BW441 Bristol Water Leakage Management Review), at lower relative levels of leakage the importance of leaks on customer supply pipes compared to water company owned mains increases, thus increasing the weight that should be placed on the per property measure.
- 188 In its determinations, Ofwat used a geometric mean of the two measures of leakage, recognising that both are relevant for different company areas, topography and leakage performance. Using the geometric mean approach places Bristol Water 18% beyond the upper quartile (not 4% as stated in PF paragraph 8.49). The table below shows companies' leakage performance for the per property measure and geometric mean relative to the industry average and upper quartile positions, using the three year average performance between 2017/18 2019/20 on the definition of leakage to be applied in AMP7.

	Leakage (litres per prop)	Difference to median	Difference to UQ	Geometric mean	Difference to median	Difference to UQ
Anglian	87.4	-34%	-1%	21.0	-31%	-19%
Bristol	75.2	-55%	-17%	21.1	-30%	-18%
South East	93.2	-25%	5%	24.6	-12%	-1%
Wessex	119.6	2%	26%	27.2	-1%	9%
SES	86.0	-36%	-3%	24.9	-10%	0%
Southern	80.1	-46%	-10%	24.0	-15%	-4%
South West	117.9	1%	25%	28.3	3%	12%
Hafren	134.5	13%	34%	27.9	2 %	11%
Welsh	118.7	2%	26%	27.1	-1%	8%
Portsmouth	88.4	-32%	0%	27.4	0%	9%
Northumbrian	98.5	-19%	10%	27.5	0%	9%
Severn Trent	116.8	0%	24%	32.5	15%	24%
South Staffs	114.5	-2%	23%	33.7	18%	26%
Yorkshire	135.1	14%	35%	36.5	25%	32%
Affinity	124.8	6%	29%	37.5	27%	34%
United Utilities	133.7	13%	34%	37.6	27%	34%
Thames	160.0	27%	45%	56.1	51%	56%

Table B1 - Leakage performance (three-year average 2017-20)

Source: Bristol Water analysis of APR table 3S AMP7 leakage data for 2017-2020. Source file provided as BW442

189 Second, the CMA has applied the cost uplift to the wrong figure. In the spreadsheet provided by the CMA,⁶¹ it is clear that the CMA has applied a 4% uplift to a base cost figure of £13 million. However, our leakage base cost forecast for AMP7 is not £13 million. The CMA's spreadsheet references our response to RFI12 as the source of the £13 million figure. In our response to RFI12, the £13 million figure stated is our estimate of the amount of our base costs *that are not funded* by Ofwat's cost models (as was clear from the RFI question). Our total base leakage costs

⁶¹ CMA (2020) 'Leakage totex calcs tables 8-2 8-3 PFs received from CMA 16102020'.



(prior to any efficiency and/or real price effects adjustments) is £20.6 million for AMP7 (in 2017/18 prices). This is a calculation error which should be corrected for the final determination.

190 Third, the CMA's approach only provides funding where performance is beyond upper quartile. However, the base cost models only reflect the industry average position. This means that the CMA has implicitly assumed that there is zero cost of maintaining leakage at the upper quartile level of performance, despite explicitly stating that in order to maintain a lower level of leakage, a company needs to spend more money.

Figure B1 – Industry leakage performance 2017-20 (geometric mean)



- 191 As base cost models only remunerate companies at an industry-average level of performance,⁶² the cost allowance uplift should be calculated relative to industry average or median performance, not upper quartile.
- 192 Over the period 2017-20, Bristol Water's leakage performance was 30% beyond the industry average (median) using the geometric mean, and 35% using the leakage per property measure. Applying a 30% uplift (geometric method) to our leakage base costs gives a cost allowance of £6.2m. Applying a 55% uplift (per property method) to our leakage base costs gives a cost allowance of £11.4m.
- 193 In the Isle Utilities review of Bristol Water Leakage Management practices (BW441), Isle shows that:

⁶² In fact, the cost allowance is less than the industry average due to the subsequent application of an upper quartile efficiency target. However, for the purposes of this response, we are not disputing the application of the upper quartile efficiency target.





- Bristol Water has a very well managed leakage system, with the standard measurement through the Infrastructure Leakage Index at an industry low value of 1.22. The approach is effective, as underlying factors including age of mains, topography and density are disadvantages that Bristol Water has to overcome.
- Due to the effectiveness of leakage management, new technology options are unlikely to be effective at reducing base costs.
- Base costs exhibit rising marginal costs as leakage levels lower, particularly due to customer pipe leakage increasing in importance.
- 194 In our Statement of Case, we estimated the additional cost of our leakage performance using two econometric approaches:
 - A PwC report commissioned by Ofwat, that found that if leakage was included as an explanatory variable in the cost models, Bristol Water would gain £7 million in the cost allowance.⁶³
 - Alternative models published by Ofwat including variables relating to leakage performance, which give Bristol Water £19 million more in the cost allowance.⁶⁴
- 195 These models result in a higher cost estimate than the CMA's methodology, even when the measure of leakage, base cost figure, and the choice of benchmark are corrected for. This reflects the logic that marginal costs will increase as leakage rates fall, increasing the difference to average costs. The CMA's approach is therefore likely to understate the level of required costs due to the marginal cost of reducing leakage increasing as leakage decreases. This rising marginal cost curve is further evidenced in the PwC report and our response to RFI18a.⁶⁵ We also showed in RFI18a our calculation that the lower level of leakage now achieved in 2019/20 that is reflected in the three-year average AMP7 targets (c. 6MI/d below business plan assumptions) has a higher base operating cost of £1.3m p.a.
- 196 A summary of the base cost increments is shown below. All of which are substantially higher than the £0.5m allowance the CMA made in its PFs. Therefore, the CMA should reflect this evidence in its final determination. As a minimum, we would expect the CMA to correct the clear implementation issues in its methodology and make an adjustment of £6.2 million, noting that this is likely to understate the amount of efficient costs required (which would need to be taken into account in the overall risk and reward package).

Table B2 – Summary of base leakage cost adjustment approaches

Approach	£m
CMA approach corrected (geometric mean)	6.2
CMA approach corrected (per property leakage)	11.4
RFI18a BW higher base costs from lower leakage level at start of AMP7	6.5
PwC model	7

⁶³ PwC (2019) 'Funding approaches for leakage reduction'.

⁶⁴ Ofwat (2019) 'Base adjustment model'.

⁶⁵ PwC (2019) 'Funding approaches for leakage reduction', page 15.



Ofwat alternative models	19
Average	10.0

<u>Leakage – enhancement costs</u>

- 197 In the PFs, the CMA set our enhancement leakage cost allowance in line with the amount we requested minus a company-specific efficiency factor. This resulted in an allowance of £4.3 million relative to our cost estimates of £4.8 million.
- 198 This approach does not recognise that fact that we already applied an efficiency challenge based on our estimate of historical base efficiency of 8% (before considering RPE and frontier shift) to our forecast costs.⁶⁶ Our approach to efficiency and the application of this challenge was detailed in our business plan.
- 199 We consider that our efficiency challenge is appropriate (the details of which are provided in our Statement of Case, Annex 7, section 4, page 233). However, if the CMA were to consider that it should apply its own efficiency challenge, then it should first remove the challenge we have applied to avoid any double counting. Our 'pre-efficient' enhancement costs for AMP7 leakage are set out below.

Table B3 - enhancement leakage costs (£m, 2017/18 prices)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Enhancement leakage costs pre-efficiency challenge	1.132	1.132	1.132	1.132	1.132	5.660
Enhancement leakage costs post-efficiency challenge	0.966	0.966	0.967	0.967	0.967	4.833

- 200 The bottom up evidence of our leakage enhancement cases was included in our response to RFI018a. We also include as an appendix an analysis by Isle Utilities which shows this is a low cost approach and other enhancement options (that may reduce the base cost adjustments we propose) are unlikely to be cost beneficial.
- 201 While the unit cost data provided by water companies and considered by Ofwat during the course of PR19 gave a wide range of results, it should be noted that our leakage enhancement unit costs are comparatively low.⁶⁷ This further supports the findings that our plan is efficient. We therefore consider that our leakage enhancement costs should be allowed in full (i.e. an allowance of £4.8 million).

⁶⁶ There was an additional adjustment for our draft determination response, where we aligned our approach to enhancement costs to Ofwat's methodology, by including a reallocation to base costs. This element should also not be included, as in total the enhancement leakage expenditure being used include a 15% efficiency challenge, before the CMA applied a further 10% plus real price effects and frontier shift in the provisional findings.

⁶⁷ Ofwat (2019) 'Wholesale Water Enhancement feeder model: Supply demand balance'.



17. 2019/20 cost data and the service-cost relationship

- 202 In the PFs, with the exception of leakage, the CMA did not explicitly consider the evidence we set out in our Statement of Case regarding the additional costs we incur to deliver higher levels of service.
- 203 We developed our plan to target improved service levels, targeting the forecast upper quartile across a range of measures most important to customers.⁶⁸ In our plan, the costs associated with this were allocated to base rather than enhancement (in line with Ofwat guidance). Other companies allocated costs to enhancement and were given cost allowances by Ofwat.⁶⁹
- 204 The base cost models do not control for differences in service levels across companies. In our Statement of Case we set out an alternative approach to identifying the degree to which forecast costs could be reflected in the base cost allowance. Our approach involved assessing where we were comparatively strong performers, identifying where Ofwat had explicitly given funding to other companies to catch up to our levels of service, and then estimating the additional base cost allowance implied for Bristol Water if that cost allowance had been allocated to other companies' base costs rather than enhancement (i.e. adjusting so that we were comparing like for like on base costs).
- 205 We commissioned KPMG to review our approach.⁷⁰ KPMG provided a view that this was a pragmatic solution given it was not practical to include quality variables in the base cost models.
- 206 The CMA did not provide comment on our analysis. Instead, the CMA adopted an approach of considering the potential for service improvements to result in higher costs on a case-by-case basis. However, the CMA did not consider the areas we set out in our Statement of Case, where we are currently high performers, and have observed other companies receiving enhancement cost allowance. The five most material areas we identified were:
 - Metering
 - Raw water
 - Resilience
 - Taste and odour
 - Lead
- 207 It is inconsistent for the CMA to consider the costs associated with other service areas, but to ignore the cost relationship with the areas of service we highlighted in our Statement of Case. We have considered the case for treating some of our base costs as enhancement for the purposes of gaining explicit regulatory consideration. We conclude that this would not be

⁶⁸ For example, a summary for each outcome is shown from page 74 of BW075 April 2019 Revised plan section A1.

⁶⁹ Bristol Water (2020) 'PR19 Redetermination - Bristol Water: Statement of Case' section 10.

⁷⁰ KPMG (2020) 'Cost model review'.



appropriate, and our costs should be considered regardless of whether they are labelled 'base' or 'enhancement'.

- 208 Further, at the aggregate level, the linkage between costs and service is further evidenced by the recently published 2019/20 data, which shows companies' costs increasing as service levels improve. We provide analysis of both these points in Annex 1.
- 209 We note that the CMA has not included the latest cost data that is available from the industry namely, data from 2019/20 (the last year from the AMP6 control period). This has been available since companies published their Annual Performance Reports in July.
- 210 Using the latest evidence available is in line with CMA policy. For example, in the PFs, the CMA stated that the *"CMA considers that, when taking decisions regarding the determination, we should use the most up to date information available"*.⁷¹
- 211 It would also be consistent with other components of the CMA's redeterminations. For example, the CMA has considered data from 2019/20 in setting service performance targets.
- 212 The cost data from 2019/20 is particularly important for the CMA to consider, as it represents data from a year where many companies have sought to improve service levels ahead of AMP7. If the CMA were to consider 2019/20 performance data in assessing whether AMP7 service targets are appropriate (as it has done in the PFs), but disregards the cost data, there would be a clear disconnect in its approach.
- 213 On 15 October we provided the CMA and Ofwat with the data files and STATA code to include the 2019/20 costs in the base cost models. If the CMA has any queries on the data or the modelling, we would be happy to help.
- 214 We request that the CMA considers the link between costs and service for the areas we set out in our Statement of Case. As a minimum, the CMA should in any event include the latest cost data for 2019/20 in its base cost models as this data reflects the cost of the higher service levels delivered by the industry.

18. Other areas of the provisional cost allowance

Cost category	Observations
Canal and River Trust	The CMA's decision is in line with established CMA precedent. We agree that Ofwat's cost models are not a robust way to estimate our efficient costs for sourcing water from the G&S Canal. These costs are unique to Bristol Water, are in addition to the costs incurred in abstracting and treating the water, and are outside of reasonable management control.

⁷¹ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 3.53.



	For the reasons set out in our Statement of Case, ⁷² we consider that our estimation of the costs of the G&S Canal are conservative and are therefore unlikely to be offset by hypothetical cost savings.
	We note that the CMA in the provisional findings applied the incremental element of the allowance as an unmodelled cost, rather than amending the FD cost adjustment claim allowance. This does not have an impact on the modelled cost allowance, but is worth noting in case parties want to undertake analysis of the base cost position.
Choice of	The CMA's approach reflects regulatory precedent.
бенсптагк	The points that Ofwat raised regarding historical outperformance for the sector in general (set in the context of different cost models and frontier shift assumptions) are irrelevant for determining the appropriate benchmark for Bristol Water and do not address the risk that allowances would be distorted by the effect of outliers, data errors and modelling inaccuracies. Similarly, Ofwat's assertion that water companies are less efficient than other sectors is irrelevant - to the extent that the frontier needs to shift, this should be (and has been) considered within the assessment of frontier shift.
Frontier shift	The CMA's challenge of 1.0% is at the top end of a range that could be supported by reasonable evidence. The Ofwat position was not aligned with macro forecasts of productivity improvement or regulatory precedent.
	We also note that, consistent with using the latest data available for 2019/20 in setting cost allowances, the CMA should only apply a frontier shift/RPE from 2020/21.
Ofwat licence fee	We remain of the view that a material increase is highly likely given the statements that Ofwat has made to date, historical trends, and the known cost increases that Ofwat will face going forward (ongoing RAPID work, pension costs and also the wider scope of activities Ofwat is now carrying out ⁷³), and the cost in 2020/21 being c39% higher than the same point of the regulatory cycle five years ago.
	We recognise that the final figure has not yet been confirmed by Ofwat. We suggest that an alternative approach to allowing an ex ante allowance could be for the CMA to specify that any cost increases associated with the Ofwat licence fee should be subject to a different cost sharing rate. This would reflect the fact that these costs are entirely outside of our control.

⁷² Bristol Water (2020) 'PR19 Redetermination - Bristol Water: Statement of Case' section 16.

⁷³ Ofwat, Letter from Rachel Fletcher to Mel Karam headed "Proposed increase in Ofwat's licence cap for 2020-2025" dated 20 December 2019.



Section C: Balance of risk

19. Summary

- 215 In our Statement of Case⁷⁴ we evidenced how Ofwat had introduced significant asymmetric downside risk, which did not reflect a balanced determination, and contributed towards the overall package not being financeable. This was driven by a series of errors, namely:
 - (a) setting some of the ODI rates incorrectly, which in part contributed towards a highly negatively asymmetric RoRE range;
 - (b) setting highly negatively asymmetric cost sharing rates, which exposed Bristol Water to an unacceptable level of downside risk; and
 - (c) introducing an unprecedented gearing outperformance sharing mechanism (**GOSM**) that further restricted our financial flexibility to manage cost shocks.
- 216 In its PFs, the CMA has partially addressed the above issues through:
 - (a) adjusting some of the ODI rates, and taking account of negative ODI RoRE asymmetry (to some degree) in the setting of the cost of capital;
 - (b) setting cost sharing rates at 45:55 (compared to Ofwat's final determination of 40:60); and
 - (c) removing the GOSM.
- 217 Overall, while this has reduced certain aspects of the negative asymmetry, the package still remains negatively asymmetric to a material degree to the extent that on a mean expected basis, Bristol Water will not be able to earn its required cost of capital. Indeed, for outcome delivery incentives, the asymmetry has become more negative due to the increase in leakage penalty rates.
- 218 We note that the CMA has considered negative asymmetry in its approach to calibrating the WACC and we agree that allowing a higher WACC is an appropriate means to address the negative outcome incentive asymmetry arising from the framework (if the asymmetry itself is not removed). We also believe the CMA can reduce the potential for negative asymmetry on totex by using cost information from 2019/20 in base cost modelling so the cost of end of AMP6 service levels carries sufficient weight in the models.
- 219 However, in its PFs the CMA did not consider the negative asymmetry from the cost sharing rates in its analysis, and its analysis understated the degree of negative asymmetry arising from the ODI package.
- 220 For the final determinations, consistent with using more recent data, the CMA should also remove the asymmetry from the cost sharing rates (i.e. move to 50:50) and address the

⁷⁴ Bristol Water (2020) 'PR19 Redetermination - Bristol Water: Statement of Case' section D.



remaining asymmetry through the cost of capital allowance we have proposed (see section A on Cost of Capital).

20. Outcome delivery incentives

- 221 We agree with the adjustments that the CMA has made to individual PCs/ODIs in the PFs.
- 222 In relation to the two issues we raised in our Statement of Case:
 - (a) Mains bursts We confirm that based on our analysis the approach of providing a mains burst per 1,000km main deadband of 10, to avoid underperformance penalties applying for normal weather variations, has a broadly equivalent impact to the amendments to the underperformance incentive rate that we proposed in our Statement of Case. The CMA amendment also achieves our objective of reflecting customer views that penalties should not apply for normal weather variations that do not affect services that customers notice, and targets that would otherwise imply additional investment to avoid penalties.
 - (b) **Per capita consumption (PCC) -** We confirm that the ODI rate used by the CMA aligns to our customer research and the position we set out in our Statement of Case.
- 223 The CMA has also made a number of further changes to ODI rates:
 - (a) Unplanned outages We agree that a deadband for unplanned outages of 1.2 times the Performance Commitment Level (PCL) is appropriate for an industry standard asset health measure. Due to Bristol Water's consistent historical level of performance, we do not expect this change to impact our P10 level of ODI risk.
 - (b) Leakage We agree with the principle that the leakage tier 1 underperformance penalty rate should reflect the tier 2 rate plus recovery of the company share of leakage enhancement expenditure. This was an approach we took in our PR19 Draft Determination response proposals, and so although it was not an approach applied in Ofwat's FD, we agree with the CMA's logic.
- 224 However, the CMA has understated the overall level of negative asymmetry, which is further exacerbated by the increase in the leakage ODI penalty rate.
- 225 The below table compares our calculations of the P10:P90 RoRE range for Ofwat's final determination, and the CMA's PFs, as well as the CMA's calculations of the P10 RoRE impact.



		P10	P90
		(% of RoRE)	(% of RoRE)
Dristal analysis	Ofwat's FD	-2.9%	+0.8%
Bristol analysis	CMA's PFs	-3.1%	+0.6%
	Ofwat's FD	-2.4%	
CIVIA analysis	CMA's PFs	-2.7%	

Table C2 – estimates of the p10-p90 RoRE impact from ODIs⁷⁵

- 226 As can be seen from the above, the CMA's ODI interventions have actually led to a more negatively asymmetric risk package than Ofwat's final determinations. This is confirmed both in our calculations and in the CMA's.
- 227 The CMA's estimation of the p10 position also understates the level of downside. The key differences between the analyses are:
 - (a) The CMA's analysis considers only six measures (the common measures), whereas Bristol Water has 20 performance commitments with financial incentives (excluding C-MeX and D-MeX). All of these measures have the potential to impact RoRE, and so therefore should be considered in the RoRE analysis.
 - (b) Our RoRE analysis is based on a Monte Carlo approach, where we have assessed the p10 on the overall package. In contrast, the CMA's approach simply sums the p10 estimates for each individual measure – this does not give a 'true p10' for the measures considered overall.
- 228 Our analysis estimates a loss of £1.3m p.a. on the median basis. This is c. 0.5% of RoRE (significantly larger than the CMA's estimate of 0.1% to 0.2% of RoRE⁷⁶). This has increased from Ofwat's final determinations (by 0.2%), due to the change in the leakage penalty rates. As we show in our ODI asymmetry analysis and the service-cost relationship evidence in cost assessment Annex 1, this affects the water service relatively more than wastewater, and therefore has a disproportionate impact on WoCs.
- 229 We consider the increase in leakage ODI rates in the PFs to be consistent with customer views and also to be technically correct. Therefore, rather than adjusting ODI rates to offset this increase, we consider the asymmetry warrants consideration in terms of the higher cost of capital (which the CMA theoretically supports in the PFs) and in terms of cost of capital allowance we have proposed (see section A on Cost of Capital section).

⁷⁵ Bristol Water analysis (summarised in Annex 1) and CMA (2020) 'CMA Bristol performance commitments and penalties', worksheet 'Summary after CMA changes'.

⁷⁶ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 7.237.



The CMA's findings on the use of customer research

- 230 The CMA set out in the PFs the value of the extensive customer engagement and research undertaken as part of PR19 for both company plans and regulatory decisions.⁷⁷ The CMA notes that customer research can be highly useful in relation to particular issues, but this should not exclusively be considered determinative to regulator's decisions.⁷⁸
- 231 The CMA's findings are consistent with the position we took in our original plan and in our Statement of Case. We did not have general concerns with how companies and Ofwat used customer research and engagement at PR19, other than in specific areas set out in our Statement of Case (specific ODIs and the CSA customer benefits test), and the CMA's PFs have addressed the issues raised.
- 232 We consider that standardising customer research methodologies between companies is unlikely to resolve the challenges with interpretation - best practice involves not relying on single methods. We agree with the CMA conclusion in paragraph 3.14 of the PFs and expect the industry and Ofwat will continue to share and develop its research and engagement approach, given the benefits all parties gain from it.
- 233 This research is unlikely to ever become a mechanical way of answering a fixed question, but equally Ofwat should not ignore its findings without specific reasoning. The diversity of the water sector and the importance to customers of a connection to their local water company is not something that we or the water industry want to lose through standardising or centralising research approaches the local relationship is of enduring value.

21. Cost sharing rates

- 234 For the reasons set out in our in our Statement of Case we consider that the cost sharing rates should be amended to be 50:50.
- 235 Cost sharing rates that are significantly asymmetric lack regulatory precedent. Further, when considered in the broader context of a price review package that significantly underfunds us relative to our business plan (for example, with a large gap on costs), such rates contribute towards a package that is not financeable.
- 236 In the PFs, the CMA has set cost sharing rates of 45:55 (i.e. for totex spend above the allowance, the companies would face 55% of the cost, with 45% being shared with customers, and for totex spend below the allowance, the company would retain 45% of the benefit, with 55% being shared with customers). The CMA justified maintaining an asymmetric position in order to provide a distinction between the rates applied to fast and slow track companies, as part of the package of information revelation incentives.⁷⁹

⁷⁷ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 69.

⁷⁸ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 3.14.

⁷⁹ CMA (2020) 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations', paragraph 6.116.



- 237 We note that the CMA has departed from its own precedent. In the 2015 redetermination, the CMA set cost sharing rates of 50:50 despite Bristol Water not being a fast-track company at PR14, and indeed having a larger cost gap than at PR19. The CMA has not justified why this precedent should no longer apply.
- 238 Companies receive a number of rewards for achieving fast track status, such as an uplift to the allowed cost of equity, early draft determinations, and increased regulatory certainty around particular components of the final determination aligning to the draft. There is also a strong reputational incentive for companies to seek fast track status. Therefore, we do not consider that differential cost sharing rates are likely to be required in order to incentivise companies, given the range of alternative options which are less problematic. Based on Ofwat's IAP scoring, totex is one aspect amongst many that determines fast track status. As there is no benefit to setting asymmetric cost sharing rates, and clear implications for the overall balance of risk, the CMA should amend our cost sharing rate for modelled costs to be 50:50.
- 239 For unmodelled costs, we broadly agree with the CMA's PFs i.e. to set a 25:75 rate (i.e. for unmodelled totex spend above the allowance, the companies would face 25% of the cost, with 75% being shared with customers, and for unmodelled totex spend below the allowance, the company would retain 25% of the benefit, with 75% being shared with customers), except for a 10:90 rate for business rates reflecting the fact that these costs are substantially outside of reasonable management control.
- 240 As set out in cost allowance section 18, we consider it would also be appropriate for a higher cost sharing to apply to Ofwat's licence fee, reflecting the fact that it is entirely outside of management control.

22. Gearing outperformance sharing mechanism

- 241 We support the CMA's decision to remove Ofwat's GOSM.
- 242 It is not clear that an issue actually exists for such a mechanism to address, and there are a number of serious concerns about the mechanism proposed (such as it limiting companies' financial resilience). There are already a number of tools available for Ofwat to encourage lower gearing (if that was shown to be a beneficial outcome for customers), such as targeted discussions and establishing reporting requirements with the relevant companies.
- 243 We agree with the CMA that there is no need at this stage to conclude whether preference shares should be included within whatever proposals Ofwat may develop going forwards. However, we maintain the position that in the context of Ofwat's GOSM, the appropriate treatment would have been to treat the preference shares as equity for the reasons set out in our Statement of Case.



Section D: Financeability

23. Summary

- 244 We agree with the CMA's overall approach to assessing financeability, which is based on a clear, market-based approach and recognises the importance of ensuring that core parameters are calibrated such that they support a financeable outcome, as required by the finance duty.
- 245 In doing so, the CMA has implicitly acknowledged the importance of financeability as a crosscheck on the adequacy of the overall price settlement and has recognised the cost of capital (both the cost of equity, cost of debt and relevant CSA components) as the key driver for financeability. This is because the cost of capital directly impacts the level of free cash flow available, and consequently ratios. Setting the correct cost of capital is therefore crucial as the ability to meet ratio thresholds consistent with a Baa1/BBB+ rating is a key determinant for concluding whether the package is financeable.
- 246 There have been some improvements made to totex allowances, cost sharing rates and the incentive package in the PFs. However, the PFs still represent a considerable challenge with respect to totex compared to the current expenditure, which is further amplified with the step-changes in performance commitments that companies are expected to achieve. The calibration of the incentives package exposes us to asymmetric risk, which should be priced in. While the CMA considers asymmetry as one reason for 'aiming up', we find that the CMA's point estimate is closer to the midpoint if more robust estimates are used for each parameter (as noted in section A on Cost of Capital, which discusses the WACC). Therefore, it is not clear if the 'aiming up' prices in all the risk.
- 247 We agree that the principle of 'aiming up' on the WACC as a reasonable approach to compensate investors for this risk. As we set out, the CMA's estimate of asymmetric risk is likely understated which implies that a higher adjustment is required to ensure that the package is a 'fair bet'.
- 248 The impact of asymmetric risk is exacerbated by our higher operational gearing relative to other companies. As we show in Annex 1, the asymmetric risk appears particularly acute for the water service and therefore WoCs, based on the most recent data. This is because we face higher operational gearing as a small company, which concentrates equity risk, and which should be addressed through a CSA on the cost of equity rather than further 'aiming up' to reflect asymmetric risk on the WACC.
- 249 The cost of capital has been calibrated such that the company is able to achieve ratios that are consistent with Baa1 thresholds. A cost of capital that is any lower would not support a stable Baa1 rating or provide the cash buffer (debt service headroom) necessary to manage the risks associated with a package that is inherently tough.
- 250 The expected loss resulting from asymmetric risk should be included in base cash flows and ratios. This would result in ratios that are closer to the minimum threshold for Baa1 and reduce the level of cash buffer available to withstand plausible shocks.



251 Downside scenario analysis is central to financeability assessments. The CMA's downside scenario, however, understates the magnitude of risks that Bristol Water is faced with. Under a set of severe, but plausible, scenarios we find that there is likely to be limited cash buffer to adequately manage this risk. This indicates that an increase in the cost of capital from that included in the CMA PFs is required to support financial resilience so as to meet the finance duty.

24. Financeability as a cross-check on the calibration of the price control, and WACC as a key main driver

252 We consider that a meaningful financeability assessment is necessary to determine whether the price control has been calibrated appropriately. In principle, if the financeability tests indicate a financeability constraint, then it must mean that some parts of the price control have not been set correctly and need to be re-assessed. This includes: the cost of capital, totex allowance, and the calibration of the ODI package.

"the assessment of a water company's ability to finance its functions takes into account a number of factors in the price redetermination, in particular the assessment of the WACC, the wholesale Totex allowances and RCV adjustments. **The financeability assessment provides a cross-check on these decisions**"⁸⁰ [emphasis added]

- 253 The CMA concludes that the WACC is the primary factor in the redetermination which determines whether an efficient firm can finance its functions.⁸¹ We agree with the CMA's principle of setting the correct cost of capital to address financeability constraints as opposed to making adjustments to the capital structure (change in notional gearing) or to the timing of cash flows (faster transition to CPIH) as suggested by Ofwat. Our Statement of Case set out why we did not consider Ofwat's remedies to be effective at addressing financeability constraints.⁸²
- 254 The key points made in our response with respect to: the cost of capital (including the CSA), updates to base efficiency for 2019/20 cost data and reflecting the additional costs of lower leakage levels are made on their merits and are consistent with the logic of the CMA PFs. If these have been set correctly, then the financeability assessment should not indicate any financeability constraints.
- 255 The cost of capital is directly related to the level of cash available after operations, which will drive ratios and consequently affect whether these will meet target ratio thresholds consistent with a Baa1/BBB+ rating. The ability to meet these thresholds is a key driver for a company to be considered financeable. As a result, setting the correct cost of capital is a key factor in ensuring that a company is financeable. This has been recognised by the CMA.⁸³

⁸⁰ CMA, 'Provisional Findings', paragraph 10.49.

⁸¹ CMA, 'Provisional Findings', paragraph 10.58.

⁸² Bristol Water (2020), Statement of Case, paras 122 – 136, and Bristol Water, Response to Ofwat, section 17, page 92.

⁸³ CMA, 'Provisional Findings', paragraph 10.95-10.96.

25. Consistency with rating agency methodologies

- 256 Rating agency opinions, and by implication the methodologies they rely on is a key test for providers of debt capital. Rating agencies provide an independent assessment of credit quality, and their assessments can be viewed as representative of the credit assessments that debt providers would typically undertake.
- 257 The CMA's financeability analysis is based on rating agency methodologies and recognises the importance of the role of credit ratio analysis as providing cross-checks to assess whether the allowed return is high enough in practice to be consistent with an investment grade rating, for example through testing the ratios implied under the PFs against target ratio thresholds.⁸⁴
- 258 The CMA's reliance on rating agency methodologies and their approach to calculating ratios (e.g. excluding the benefit of adjustments to PAYG rates in Moody's AICR) is consistent with a marketbased approach to assessing debt financeability. Providers of debt capital rely heavily on the opinions of rating agencies when deciding whether to issue debt and on what terms. It is therefore crucial to take into account these methodologies when assessing whether the package is financeable.
- 259 We presented several arguments in our Response to Ofwat which supports giving regard to rating agencies and the methodologies they rely on.⁸⁵

26. Pricing in additional risk in the WACC

26.1 Asymmetry and 'aiming up' on the WACC

- 260 The CMA stated that the asymmetry of returns in the package was one factor in its decision to aim up on the cost of equity. It stated that *"there are reasons...related to asymmetry and financeability, which justify a degree of caution against setting the cost of capital too low"*. ⁸⁶
- 261 A necessary condition for financeability is that investors expect to earn their required returns, which can only be achieved if the price control represents a 'fair bet', i.e. expected returns are equal to allowed returns. Where companies are exposed to asymmetric risk, this would lead to an expected loss which would result in companies achieving a lower return than required on a mean expected basis. This has been recognised by the CMA in the past. For example, in the FD for SONI, the CMA stated:

"the UR failed to have regard to asymmetric risk and that, [...], this would result in expected returns being lower than the assumed WACC."⁸⁷

262 This would result in implications for equity financeability, which was also recognised by the CMA. In the SONI appeal, the CMA concluded that the asymmetry would lead to an expected loss, and

⁸⁴ CMA, 'Provisional Findings', paragraph 10.59, 10.66.

⁸⁵ Bristol Water, Response to Ofwat, section 14.1.

⁸⁶ CMA, 'Provisional Findings', paragraph 9.606, 9.674.

⁸⁷ CMA, 'SONI FD', paragraph 7.371.



failure to account for this and make other necessary adjustments would "(...) materially affect the return required to remunerate SONI for the risks faced by the investors"⁸⁸

- 263 Overall, a package that has asymmetric risk would result in an outcome that does not represent a 'fair bet' and is consequently not financeable. Pricing in asymmetric risk in the cost of capital or mitigating this risk through adjustments to the package is therefore crucial to ensuring a financeable outcome for both debt and equity investors.
- 264 In the PFs, the CMA has addressed asymmetric risk in the package by: 1) pricing an estimate of it in through 'aiming up' on the WACC; and 2) reducing incentive risk in the package, e.g. through changes in cost sharing rates and adjusting ODIs. However, as noted in the WACC section, we find that the CMA's point estimate is closer to the midpoint if more robust estimates are used for each parameter. Therefore, it is not clear if the CMA has in fact appropriately reflected the asymmetry in the regulatory settlement through the 'aiming up' in the PFs.
- 265 We agree with the principle of pricing in asymmetric risk through 'aiming up' on the cost of capital, which will provide additional cash flows and consequently increase the level of cash buffer to manage this risk.
- 266 While we agree with both principles, pricing in asymmetric risk or reducing incentive risk in the package, we consider that the package is still very tough and does not fully balance risk and return. The CMA itself has noted that the changes it made to penalty only ODIs *"only have a small effect on the overall balance of risk in ODIs"*.⁸⁹
- 267 The CMA has recognised that an efficient company would expect to face penalties on average, which it estimates to be in the range 0.1 - 0.2% of RoRE, due to, for example, the number of asymmetric penalty only ODIs.⁹⁰ We consider this understates the level of asymmetry in the package for Bristol as a small company, and have presented additional analysis in the balance of risk section 20 which finds the risk from asymmetry to be around 0.5% of RoRE.⁹¹
- 268 Overall, this implies that a higher adjustment would be required to 'price in' this risk and ensure that the package represents a 'fair bet'.

26.2 Operational gearing and a CSA uplift on the cost of equity

269 It is important to recognise that as a small WoC, we have a higher level of operational gearing which results in equity risk being concentrated for Bristol Water. This would result in the expected downside loss being greater for Bristol Water relative to the loss that would be faced by a large company facing similar risk exposure. As set out in our Statement of Case⁹², the higher operational gearing implies a lower capital employed relative to operating costs, which would

⁸⁸ CMA, 'SONI FD', paragraph 7.376.

⁸⁹ CMA, 'Provisional Findings', paragraph 10.51.

⁹⁰ CMA, 'Provisional Findings', paragraph 10.72.

⁹¹ We note that a) the risk particularly applies to the water service and b) the £1.5bn overspend on the water service across the industry with net ODI underperformance illustrates that this is not a new issue, and with harsher PR19 incentives is likely to increase even further.

⁹² Bristol Water (2020), Statement of Case, paragraph 241.



result in a given cost or ODI shock having a disproportionately larger impact compared to a large WaSC.

270 The impact of asymmetric risk, as set out above, is exacerbated by our relatively low RCV (and higher operational gearing) as set out in previous submissions and discussed in cost of capital section 14. This should be addressed through a CSA on the cost of equity rather than further 'aiming up' on the WACC.

27. Assessing financeability under the CMA's provisional findings

27.1 There is limited cash buffer available under the PFs

- 271 The PFs represent a tough package with significant reductions in totex relative to historical levels, a step change in performance targets relative to PR14 levels and a WACC that is still considerably lower relative to PR14. It is therefore necessary to consider the implications of the level of stretch and the challenge in the package, which is driven by the design of the package, on the balance of risk and return.
- 272 We agree with the CMA's approach, which tested the PFs against target ratio thresholds and considered the results as part of an in the round assessment, on the basis that credit rating is impacted by a range of relevant factors including credit ratio analysis.⁹³
- 273 The CMA has calibrated the WACC such that under the notional financing structure, the company can achieve financial ratios consistent with Baa1 specifically an AICR of c.1.54x that is just above the minimum threshold of 1.5x. As we set out below, once we consider the implications of the 'totex gap' and the risks resulting from asymmetry in the package in base case cash flows, there is little cash buffer in leverage and coverage ratios, and therefore equity buffer left. Overall, the projected cash flows, in particular after accounting for the 'totex gap', would not be sufficient to ensure a Baa1 credit rating.
- 274 This suggests that a lower WACC would not support a stable Baa1 rating, or the cash buffer and financial resilience necessary to manage the risks inherent in a package that is considerably tough.
- 275 The relative tightness of ratios against Baa1/BBB+ thresholds has also been recognised by Moody's in a publication following the provisional findings. Moody's also highlighted that the overall financeability position under the PFs is weak relative to historical levels.

" we estimate that the increase in allowed returns alone will boost the four companies' adjusted interested coverage ratios (AICR) by around 0.20 – 0.25x over AMP7 compared with Ofwat's final determination, **although they will still fall below historical levels and be weakly positioned against our ratio guidance** " ⁹⁴ [emphasis added]

⁹³ CMA, 'Provisional Findings', paragraph 10.68.

⁹⁴ Moody's (2020), 'CMA appeals give higher returns'. 30 September, page 1.



276 S&P stated that even though it expects credit metrics to improve relative to Ofwat's FD, there would still be downward pressure on ratings given that package would be challenging.

"Although credit metrics could improve, compared with the projections we based on inputs from Ofwat's FD, **we still expect these U.K. water networks to face tougher operating conditions in AMP7** than in the current regulatory period, like the rest of the sector. **The ratings remain under strain**."⁹⁵ [emphasis added]

- 277 The CMA states that the asymmetric risk implied by the calibration of ODIs, e.g. due to the number of penalty-only ODIs, is likely to result in penalties, which it estimated to be in the range of 0.1 0.2% of RoRE. It does not consider that the penalties from asymmetry would change conclusions on the financeability of base case ratios.⁹⁶ While we agree that a penalty of this magnitude is not likely to affect the projected credit rating of the notional company, the CMA's conclusion, however, does not take into account the following:
 - The expected loss from asymmetry should be included in base cash financial projections, in order to reflect the expected outcome.
 - As set out in Table D.3 below, including the CMA's estimate of the expected loss (0.1 0.2% of RoRE) in base case cash flows results in the AICR dropping from a relatively stable Baa1 (c.1.54x) to a level that is closer to the minimum threshold, of 1.5x, for a Baa1 rating. All else equal, this indicates there is limited cash buffer relative to Baa1 thresholds in the base case (which is consistent with the cost of capital being set at the minimum level required to maintain an investment grade rating) and that even small levels of underperformance would result in projected cashflows falling below the level required to maintain Baa1/BBB+.
 - In addition, the CMA's estimate of asymmetry understates the level of risk we are exposed to under the PFs as a small company. As set out in balance of risk section 19, we have updated our ODI analysis and find that the expected loss resulting from asymmetry in the base case is equivalent to 0.5% of RoRE on a mean expected basis, which would result in equity investors earning a lower return than required. Under this scenario, the AICR drops to 1.43x in the base case which is below the minimum threshold for Baa1.
- 278 In our Statement of Case, we explained that the allowed level of totex was c. £30m less than the forecast in our plan.⁹⁷ As we need to incur these base costs in order to be able to deliver our plan, we find that AICR in the base case would fall to 1.21x (excluding any asymmetric downside on ODIs). This is below the minimum thresholds required for a Baa1 and Baa2 rating of 1.5x and 1.3x respectively. This would also have an implication on equity financeability, with RoRE falling by c. 1.4% on a mean expected basis.⁹⁸

⁹⁵ S&P (2020), Global Ratings, 'U.K. Water Utilities: Was Appealing Ofwat's Determination Worth it?', October, page 3.

⁹⁶ CMA, 'Provisional Findings', paragraph 10.72.

⁹⁷ Bristol Water (2020), Statement of Case, paragraph 82.

⁹⁸ Assuming a 50% totex sharing rate as is standard for RORE calculation, although noting this would be 1.6% based on the 55% in the PFs as a separate aspect of asymmetry.



	CMA PFs (WACC & Totex)	CMA PFs, + 0.15% RoRE penalty	CMA PFs, + BRL 0.5% RoRE penalty	CMA PFs, + BRL Totex gap
AICR	1.54x	1.50x	1.43x	1.21x
S&P FFO / Net Debt	13.8%	13.6%	13.3%	12.1%
Impact on RoRE		(0.15%)	(0.50%)	(1.4%)

Table D.3 Implications of AICR on projected credit metrics

Note: RoRE impact calculated as (£6m * 50%) / Average regulated equity of £208m)

Source: Bristol analysis of Ofwat model and CMA financial model

- 279 The analysis suggests that the CMA's estimate of the cost of capital supports financial ratios at levels which are marginally above the minimum thresholds required to achieve Baa1, i.e. support a weak Baa1/BBB+ rating (based on the CMA's estimate of asymmetry), and below the minimum threshold when we factor in our estimate of asymmetry in the package (in both totex and ODIs). This suggests that asymmetric risk is not fully priced in and equity investors would earn a lower return than required resulting in implications for equity financeability. We agree with the principle of aiming up on the WACC as a relevant approach to pricing in asymmetric risk, however we also note that the impact from asymmetric risk is greater for a small company like Bristol Water, because equity risk for a small company is more concentrated due to operating leverage. The above demonstrates that the cost of equity allowance is insufficient for a small company like Bristol Water, and supports our argument that we require an adjustment to the cost of equity to reflect the impact of risk on expected debt and equity returns, in the case of a small company.
- 280 The 'totex gap' would result in a significant reduction in the buffer available, which would come at the expense of equity holders. Specifically, the underperformance on totex would significantly reduce the cushion available in the debt service ratios under the PFs.
- 281 Overall, when considered in the round, the impact of both asymmetry and the 'totex gap' would materially impact the ability to achieve a stable Baa1 rating. This would also result in a considerable reduction in equity returns in the base case and would result in equity investors not being able to reasonably expect to earn the required return.
- 282 We therefore ask the CMA to reconsider the case for allowing an adjustment to the cost of equity for operating leverage, to mitigate the equity risk we face as a small company.

27.2 Downside scenario analysis

- 283 Testing for financeability (and more specifically the ability to maintain an investment grade rating) under severe, but plausible and realistic, downside shocks is an integral element of financeability assessments. It represents standard market practice, is a condition for debt investors to provide finance, and has been recognised by regulators in the past (for example, water companies have an annual requirement to provide long-term viability statements).
- 284 The CMA has tested the implications for financeability under a penalty equivalent to 1% of RoRE per year, which it considers to be a severe downside scenario. It found that the notional company would be able to maintain an investment grade rating in the bands BBB+/Baa1 to BBB-



/Baa3 under this scenario and as a result would be resilient to such shocks. ⁹⁹ However, given the level of stretch under the package, we consider that the CMA's scenario would understate the level of risk we are exposed to. By implication, this could understate the level of cash buffer we require to manage these risks. Ofwat's view, under the FD, for Bristol's P10 ODI was 2.15% which is almost double that assumed by the CMA. A similar observation can be made for other companies. As illustrated in the figure below, the P10 ODI impact for all companies is considerably greater than 1% for most companies.



Figure D.1 Ofwat's view on ODI risk ranges (% RoRE)

Source: Ofwat 'Aligning risk and return technical appendix', Figure 3.6

- 285 We have therefore assessed the financeability of the package under a set of scenarios that are based on our own risk analysis and what we consider would more appropriately reflect the risk associated with the package. These are based on the scenarios we modelled in our Statement of Case but updated to reflect changes made under the PFs. In our previous submissions, we presented rationale which justified the plausibility of the downside scenarios modelled.¹⁰⁰ The following downside scenarios are tested:
 - **Revised P10 ODI penalty equivalent to 1.9% RoRE in three years of the control** as set out in Annex 2¹⁰¹. We consider this to be a reasonable estimate given the step change in performance targets relative to PR14, and the inherent asymmetry in the calibration of the incentives package.
 - **Totex overspend of 8%**. We consider this to be a plausible scenario given the considerable totex gap of 5% between our business plan and the PFs. This is lower than Ofwat's

⁹⁹ CMA, 'Provisional Findings', paragraph 10.71, 10.91.

¹⁰⁰ Bristol Water, Response to Ofwat, Annex 4.

¹⁰¹ Note that this is based on the Monte Carlo conjoined risk analysis of the CMA PFs and is not equivalent to the 2.1% presented by Ofwat in the FD, which is the sum of individual ODI risks. The equivalent P10 level for Bristol Water from the PFs is 3.1%, due to the higher tier 1 leakage penalties falling within P10 to P50 ranges. See Annex 2 for explanation.



prescribed totex overspend of 10% and is similar to the cumulative overspend across AMP6 by Thames Water (7%)¹⁰² and United Utilities (9%).¹⁰³

- A combined scenario of an 8% totex overspend and ODI penalty equivalent to 1% RoRE in three years of the price control.
- 286 In our analysis we adopt the same thresholds used in our previous submission, which have been endorsed by the CMA:¹⁰⁴
 - Moody's AICR: (at least) 1.5x for Baa1, 1.3x for Baa2 and 1.1x for Baa3
 - S&P FFO / Net debt: (at least) 9% for BBB+ (Baa1), 8% for BBB (Baa2) and 6% for BBB- (Baa3)
- 287 The downside scenarios have been modelled using Ofwat's financial model, and the results cross checked with the CMA's financeability calculations. The results of the scenario analysis are presented in Table D4 below.
- 288 Under the notional financing structure, the AICR under these scenarios would be in the range 1.09x 1.34x. The ODI penalty scenario is at the minimum threshold (of 1.3x) for Baa2, whereas the totex overspend scenario is only just above the minimum threshold for Baa3 (of 1.1x). In the combined scenario the investment grade rating would be at risk, with an AICR at around 1.1x.
- 289 The financial projections suggest that there is not enough cash buffer relative to the Baa3 thresholds to withstand plausible downside shocks. The impact of these scenarios would be exacerbated if the expected loss from asymmetric risk is also taken into account. As set out in Table D.3 above, the impact of asymmetry is 0.04x 0.11x on the AICR. Including the impact of this in the downside scenario analysis would indicate that the resilience to downside shocks is even lower. For example, it would reduce the AICR under the ODI penalty from 1.34x to c.1.23-1.30x, and the totex overspend scenario from 1.17x to c.1.06x 1.13x. The AICR under these scenarios is very close to minimum threshold for Baa3, and slightly below it in one scenario.

Table D4 - Projected metrics under downside scenarios – notional structure

	AICR (Moody's)	Net Debt / RCV (Moody's)	FFO / Net Debt (S&P)
Base case	1.54x	59.7%	13.8%
ODI Penalty	1.34x	60.5%	12.9%
Totex overspend	1.17x	63.1%	11.9%
Combined scenario	1.09x	63.5%	11.5%

Source: Bristol analysis of Ofwat financial model

290 Overall, the results illustrate that under plausible downside scenarios we would achieve ratios consistent with a Baa3/BBB- rating, which could be at risk, for example under the combined

¹⁰² Thames Water, Annual Performance Report 2020, p.31. Total allowed totex was £5288m and cumulative over-spend was £352m, giving a cumulative over-spend of 352/5288 = 6.7%

¹⁰³ United Utilities, Annual Performance Report 2020, Table 4B. Total allowed totex was £7,408.3m and cumulative over-spend was £656.7m, giving a cumulative over-spend of 656.7/7408.3 = 8.8%

¹⁰⁴ CMA, 'Provisional Findings', paragraph 10.65



scenario. This suggests that there is limited cash buffer to maintain resilience to such shocks which is due to: the expected loss from asymmetry in the package and the toughness of the settlement with respect to costs and performance targets, both of which put pressure on credit ratios. The implication of this is that a settlement that is any tougher, in particular on the cost of capital, would risk putting the investment grade rating at risk under plausible but severe downside scenarios.

291 We consider that the CMA should also recognise the importance of financeability constraints for investors and the implications of this on their appetite to invest. Financeability is also important for customers as it enables companies to raise the necessary finance (at an efficient cost), which is key for companies to make sustainable investments required to deliver the necessary services and improvements for customers.



Annex 1: Additional analysis

1 This annex provides further supporting analysis on the relationship between costs and service. It considers updating the CMA's PF analysis for 2019/20 cost and performance data, and details how this further demonstrates the relationship between recent improvements in industry performance and higher costs, which is particularly significant for companies with better levels of performance.

1. Analysis of AMP6 operational performance

- 2 In the PFs the CMA considered (section from paragraph 7.65) the relationship over the first four years of AMP6 between cost and service levels. We have updated this analysis for the five years of AMP6, and undertaken a separate assessment for the water service. We then show how this supports our PF response views on the use of 2019/20 data and the asymmetric ODI risk for the water service.
- 3 The CMA compared cost and service relationships in figure 7-3 which we replicate below.

Figure AN1.1 - Figure 7-3 from CMA PFs

Figure 7-3: Operational performance across years 1 to 4 of AMP6, and associated financial rewards for shareholders (as % of RORE), by company



Source: Ofwat, service delivery report data 2018-19

Note: applies a 50% cost-sharing rate to totex figures; Returns on notional regulated equity, taken as a sum of the individual % RORE figures across the four years.



- We set out in section 17 above that it is important that the CMA considers both the base costs and service levels over the whole AMP6 period from 2015-20. We show that for Bristol Water base cost modelling using the five years of data from 2015/16 to 019/20, using the CMA PF approach, results in c. £25m (6%) additional base cost allowances.
- 5 There are a number of reasons for considering the service-cost relationship over the AMP6 fiveyear period now this data is available, including:
 - (a) Some ODI penalties were calculated over a five-year average, and therefore only applied in the final year.
 - (b) Companies have responded to their service level targets for AMP7, and like Bristol Water started to transform their service levels and cost base to be ready for the AMP7 performance commitment and cost challenges.
 - (c) Companies have responded to challenges during the period in response to Ofwat's AMP6 incentives, noting the final ODI and cost performance is now reflected in the blind-year adjustments Ofwat have recently consulted on.
 - (d) Industry performance has improved for key water service levels for 2019/10, particularly for Leakage (by 7% compared to 2018/19¹⁰⁵), water quality CRI (by 26%¹⁰⁶) and supply interruptions (by 11%¹⁰⁷).
- 6 The 2019/20 cost data for industry clearly shows a different position on outperformance across 2015-2020 compared to that shown in Ofwat's reporting of outperformance in 2018/19 for 2015-2019.
- From the data that Ofwat provided for Q24 of RFI011 and 2019/20 annual return data, we have estimated the following relationship. We focus on the water service, rather than looking at water and wastewater together, as the relevant comparison for a water only company.¹⁰⁸ The cost trend shows underperformance increasing from £0.7bn over 2015-19 to £1.5bn over 2015-20, and there is a general trend of worse totex performance applying to all companies without exception.

¹⁰⁵ Sourced from www.discoverwater.co.uk.

¹⁰⁶ DWI Chief Inspector's Annual Report.

¹⁰⁷ Sourced from www.discoverwater.co.uk.

¹⁰⁸ This differs from the illustration in CMA PF para 7.66 and figure 7-3, as we think it is appropriate to focus on the water service given we are not a wastewater provider.



Table AN1.1 – Water service cum	lative 2015-20 wholesale totex	performance (£m)
---------------------------------	--------------------------------	------------------

2012-13 base year prices		
Water service cumulative wholesale totex out/(underperformance)	2018/19	2019/20
ANH	60.5	1.1
WSH	-113.3	-161.2
HDD	1.0	-4.2
NES	-33.6	-77.7
SVE	-117.8	-337.8
SWB	101.3	113.4
SRN	-6.5	-71.1
TMS	-404.5	-617.6
UU	-195.9	-261.5
WSX	26.1	14.3
YKY	-53.0	-127.1
AFW	2.3	-23.5
BRL	14.2	-4.7
PRT	4.3	0.2
SEW	39.3	34.5
SSC	-1.3	-3.1
SES	6.9	2.6
Total	-669.9	-1523.4

8 In addition to this water service cost trend, we have considered the overall water and wastewater position, against total ODIs and RORE, replicating the analysis used in the CMA PFs:

Table AN1.2 Calculation of wholesale AMP6 operating outperformance

C	Cumulative actual wholesale totex	Cumulative wholesale	Wholesale Totex out/(under)performanc	difference	choring 500/	AVG Regulated	Totex performance	Net ODI payment	Avg ODI as %	Operatin g performa nce (totex +ODI) %
	2024		e 9.00/	220	511a1 ilig 50 /0 170	2512	RORE /0	3	1 40/	0 110/
	3021	4100	0.2/0	162	170	1790	0.076	34	0.20/	4 7 20/
	2/10	2002	-0.4%	-103	-02	1709	-4.0%	-3	-0.2%	-4.72%
	115	112	-2.0%	-3	-1	27	-5.4%	0	-1.9%	-1.33%
NES	2152	2298	6.4%	146	/3	1366	5.3%	10	0.7%	6.07%
SVE	54/5	5505	0.5%	29	15	2854	0.5%	141	5.0%	5.50%
SWI	1421	1686	15.7%	265	133	1119	11.8%	1	0.6%	12.45%
SRN	2613	2626	0.5%	13	7	1582	0.4%	-5	-0.3%	0.10%
TMS	8065	7408	-8.9%	-656	-328	4445	-7.4%	-243	-5.4%	-12.74%
UU	5640	5288	-6.7%	-353	-176	3622	-4.9%	38	1.0%	-3.83%
WSX	1622	1769	8.3%	146	73	1012	7.2%	25	2.5%	9.74%
YKY	3529	3422	-3.1%	-107	-53	2102	-2.5%	63	3.0%	0.44%
AFW	1088	1063	-2.4%	-25	-13	389	-3.3%	-13	-3.4%	-6.69%
BRL	428	422	-1.4%	-6	-3	163	-1.8%	-5	-3.2%	-5.02%
PRT	138	138	0.1%	0	0	47	0.2%	-2	-4.0%	-3.83%
SEW	742	777	4.4%	34	17	424	4.1%	-1	-0.2%	3.87%
SSC	390	387	-0.8%	-3	-2	120	-1.3%	2	1.9%	0.60%
SES	223	222	-0.6%	-1	-1	81	-0.8%	1	1.6%	0.88%
Total	40177	39833	-0.9%	-344	-172	23652	-0.7%	49	0.2%	-0.52%



- 9 Based on this updated information we observe for water and wastewater that:
 - (a) The industry overspent by £0.3m over AMP6, noting that the overspend on water was £1.5bn. This emphasises that increased cost in the water service is the main driver of cost underperformance over AMP6 in total. Net ODI rewards reduced in 2019/20, with the net AMP total being less than £50m. Assuming an average cost sharing rate of 50%, this results in operational underperformance reducing shareholder returns of c. £100m over AMP6 (£172m totex underperformance after 50% cost sharing less £49m less ODI outperformance).
 - (b) The overall results for individual companies were:
 - (i) 8 out of 17 companies underperformed on wholesale totex overall.
 - (ii) 7 out of 17 companies underperformed on net ODI rewards.
 - (iii) Overall 4 out of 17 companies underperformed on totex whilst having net ODI penalties, although 5 outperformed on both aspects of operational performance
- 10 We have replicated figure 7-3 from the CMA PFs based on the 2015-20 data:

Figure AN1.2 - Figure 7-3 from CMA PFs based on 2015-20 data





11 We also completed a fully "water service only" analysis that considers wholesale water totex and water wholesale ODI performance, compared to average water service equity.

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	Cumulative	Cumulative	wnoiesaie							Operating
	actual	wholesale water	Totex				Totex	Net ODI	Avg ODI	performance
	wholesale water	totex allowance	out/(under)perfo	difference	Totex sharing	AVG Regulated	performance	payment	as %	(totex +ODI) %
Company	totex (£m)	(£m)	rmance	(£m)	50%	equity	RORE %	s	RORE	RORE
ANH	1667	1668	0.1%	1	1	954	0.1%	14	1.4%	1.50%
WSH	1355	1194	-13.5%	-161	-81	568	-14.2%	-16	-2.8%	-16.99%
HDD	108	104	-4.0%	-4	-2	26	-8.0%	-1	-2.3%	-10.37%
NES	1380	1302	-6.0%	-78	-39	670	-5.8%	0	0.0%	-5.81%
SVE	3115	2777	-12.2%	-338	-169	1382	-12.2%	-10	-0.7%	-12.91%
SWT	697	810	14.0%	113	57	521	10.9%	7	1.4%	12.25%
SRN	826	755	-9.4%	-71	-36	336	-10.6%	4	1.1%	-9.49%
TMS	3934	3316	-18.6%	-618	-309	1866	-16.6%	-108	-5.8%	-22.35%
UU	2609	2348	-11.1%	-262	-131	1276	-10.2%	-1	0.0%	-10.29%
WSX	663	677	2.1%	14	7	357	2.0%	1	0.3%	2.30%
YKY	1611	1484	-8.6%	-127	-64	. 874	-7.3%	16	1.9%	-5.39%
AFW	1087	1063	-2.2%	-24	-12	389	-3.0%	-13	-3.5%	-6.49%
BRL	427	422	-1.1%	-5	-2	163	-1.4%	-5	-3.2%	-4.61%
PRT	138	138	0.1%	0	0	47	0.2%	-3	-6.0%	-5.80%
SEW	742	777	4.4%	34	17	424	4.1%	-1	-0.2%	3.90%
SSC	390	387	-0.8%	-3	-2	120	-1.3%	2	1.9%	0.61%
SES	219	222	1.2%	3	1	81	1.6%	1	1.0%	2.59%
Total	20966	19443	-7.8%	-1523	-762	10053	-7.6%	-112	-1.1%	-8 69%

Table AN1.3 - Calculation of water wholesale AMP6 operating outperformance

- 12 For the **water service** we conclude
 - (a) On the water service the industry overspent by over £1.5bn over AMP6. There were net ODI penalties of £112m, a position approximating to zero excluding Thames Water. Assuming an average cost sharing rate of 50%, this results in operational underperformance reducing shareholder returns of c. £900m over AMP6. This is therefore much higher on the water than wastewater service, emphasising the pressures of leakage, supply interruptions, mains burst incentives and CRI.
 - (b) The overall results for individual companies were:
 - (i) 11 out of 17 companies underperformed on water totex
 - (ii) 10 out of 17 companies underperformed on net water ODI rewards
 - (iii) Overall 8 out of 17 companies underperformed on totex whilst having net ODI penalties, although 4 outperformed on both aspects of water operational performance
- 13 The AMP6 water totex and ODI outperformance graph is replicated below:





Figure AN1.3 – AMP6 water totex and ODI outperformance

- 14 We consider from this updated evidence that it is clear that the industry cost to deliver ODI targets (reflected in the base cost modelling) has increased as service has improved, specifically for the water service, and there is no clear ODI outperformance that has offset this. As Ofwat have toughened ODI targets and cost challenges, this situation could well worsen in AMP7. We can also observe that over the full five-year period companies have not underspent on the water service whilst targeting ODI underperformance. This is consistent with the use of glidepaths for improving performance in AMP6 and AMP7 for supply interruptions at an accelerating rate as the tolerance for individual service events within the overall target levelr educes, the introduction of CRI as a penalty-only incentive and the challenge of reducing leakage targets.
- 15 For the water service in particular, supply interruptions and water quality include the risk of third-party events that are outside immediate management control that can easily contribute to ODI penalties.
- 16 In paragraph 7.75 of the PFs, the CMA state "The ODIs have been designed on the basis that some companies may choose to underperform on some ODIs, if they conclude that the investment cost associated with achieving the targets is disproportionate". It is important to observe that it would not be acceptable to Ofwat, other regulators and stakeholders, or consumers to systematically target non-delivery of performance commitments. There is no evidence from the AMP6 comparison above this is an approach likely to be adopted for the water service.
- 17 Ofwat states in its Final Determinations (using one example¹⁰⁹) "If Bristol Water accepts our final determination, it will be accepting that it has adequate funding to properly carry out the regulated business, including meeting its statutory and regulatory obligations, and to deliver the

¹⁰⁹ Ofwat (2019), 'PR19 final determinations – Bristol Water final determination', page 2.



outcomes within its final determination." Ofwat can take enforcement action and levy additional penalties for companies who do not deliver the outcomes, and targeting non-delivery of Performance Commitments would be an example of where Ofwat would do this. The enforcement action taken by Ofwat against Thames Water on leakage is a practical example of this.

18 It is clear from the water industry cost and outcome performance that using the most recent cost data from 2019/20 (as part of a five-year 2016-2020 cost model data set, to provide appropriate weight to this data) means there is less need for the CMA to make specific adjustments for non-leakage service-cost relationships. Using this most recent data, now that it is available, is essential to reflect the emerging cost and service levels, for the water service in particular. The evidence we show above shows a different relationship compared to the data for the first four years of AMP6 that were used to inform the PFs.

2. Cost modelling with 2019-20 cost data

- 19 We have used the Ofwat base cost feeder models, using the CMA PFs files to calculate efficiency scores across multiple time periods, to test the sensitivity of using different time periods. We provided the files we used for this analysis to the CMA and other parties on 15 October 2020.
- 20 The UQ challenge is used, further detail is given below in the catch-up efficiency section.
- 21 The frontier shift is updated to 1% to reflect the CMA's PFs, this is reflected in the 'efficient base figure.

Methodology

- 22 Importantly, the booster pumping station data is not updated to reflect the 19-20 APR data. The definition of this data changed for the 19/20 data; therefore, it would be inconsistent to update the data to reflect this as it would not be reported on the same basis as previous years. For 19-20, in the model the forecast of booster pumping station is as per the companies' business plans.
- 23 The property forecasts have been updated to reflect the CMA's ONS forecasts. The forecasts are used for 2020-21 onwards as the data exists for 19-20.
- The impact on Bristol Water's modelled base costs compared to the PFs is £13m. Including catchup, frontier shift & RPEs results in a positive difference to the PFs of £23m. The CMA refers to £343m as the modelled base cost, this include growth, enhancement opex and the CAC for the G&S canal. On this basis, the difference when including the 19-20 data is £26m. Adding in the additional £3m for the G&S canal to the CAC results in a total difference to the PF of c£29m (reflected as unmodelled costs rather than adjusting the CAC in the PFs).



	19-20 Model	Ofwat FD	CMA PF	Difference to PF
Modelled Base	370	358	357	13
Catch-up	366	342	343	23
Efficient Base	361	333	335	26
Growth	4	4	4	
Enhancement				
Opex	-2	-2	-2	
CAC	6	6	6	
	369	341	343	26

Catch-up Efficiency

25 Using a 5-year time period to inform the catch-up for 19-20 (2015-16 to 2019-20) the catch-up challenge at different levels is shown below:

Table AN1.5 - 2016-20 base model catch up challenge

	Ofwat / CMA PF	19-20 data
UQ	0.9612	0.9903
4 th Company	0.9540	0.9779
Frontier	0.7860	0.787

26 The model appears to have a similar robustness to previous years and therefore the justification given by the CMA for using an UQ of efficiency is maintained:

"These changes [to the models]...did not result in substantial improvements in the econometric modelling. Furthermore, we are wary of placing too much reliance on comparisons of efficiency scores. Over-fitting a model could lead to a smaller range of efficiency scores but would not necessarily imply that the model was better at predicting cost allowances." **4.294 pg.165**

27 The model coefficients are shown below:

CMA/Ofwat							
	WRP1	WRP2	TWD1	WW1	WW2		
Inproperties	1.007***	1.007***		1.034***	1.020***		
pctwatertreated36	0.008***			0.005***			
Inwedensitywater	-1.647***	-0.981**	-3.120***	-2.220***	-1.789***		
Inwedensitywater2	0.103***	0.056	0.248***	0.156***	0.125***		
Inwac		0.486***			0.568***		
Inlengthsofmain			1.049***				
Inboosterperlength			0.455***	0.231**	0.256***		
_cons	-4.274**	-6.607***	5.686***	-1.106	-2.725**		
R_squared	0.934	0.921	0.967	0.975	0.977		
RESET_P_value	0.542	0.159	0.124	0.229	0.148		

Model including 2019-2020 data							
	WRP1	WRP2	TWD1	WW1	WW2		
Inproperties	1.033***	1.030***		1.028***	1.018***		
pctwatertreated36	0.008***			0.006***			
Inwedensitywater	-1.645***	-1.107***	-3.310***	-2.403***	-1.940***		
Inwedensitywater2	0.104***	0.066**	0.264***	0.170***	0.137***		
Inwac		0.420***			0.517***		
Inlengthsofmain			1.048***				
Inboosterperlength			0.598***	0.333***	0.341***		
_cons	-4.625***	-6.414***	6.838***	-0.066	-1.779		
R_squared	0.931	0.917	0.962	0.973	0.975		
RESET_P_value	0.481	0.176	0.067	0.115	0.036		

- 28 As can be seen from the above, all the coefficients remain significant with the inclusion of the 2019/20 data. Indeed, the variable for density squared in the WRP2 model becomes statistically significant at the 5% threshold, when previously it was not significant even at the 10% threshold.
- 29 This data is input into the CMA's sensitivity analysis of efficiency scores in the graph below.



Efficiency Gap

30 We show below a comparison of the efficiency gap over 5-year period using the updated 19-20 data.


Table AN1.6 - Efficiency gap utilising 2019-20 data

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2014-16 to	2018-19	2015-16 to 2019-20			
Company	Efficiency score	Company	Efficiency score		
PRT	0.79	PRT	0.76		
YKY	0.93	SWB	0.93		
SSC	0.94	SSC	0.94		
SWB	0.95	YKY	0.98		
DVW	0.96	SRN	0.99		
SEW	0.98	SEW	1.00		
SRN	0.98	NWT	1.00		
NES	1.00	AFW	1.01		
WSX	1.01	DVW	1.02		
NWT	1.01	NES	1.04		
AFW	1.03	WSX	1.04		
ANH	1.06	TMS	1.05		
TMS	1.06	SVT	1.06		
SVT	1.10	BRL	1.13		
BRL	1.13	WSH	1.14		
SES	1.14	ANH	1.14		
WSH	1.17	SES	1.22		



Annex 2: ODI and RORE analysis

- 1 This annex includes supporting details of our ODI and RORE analysis for the PFs.
- 2 We show below the RORE analysis for the individual metric P10:P90 ranges, which represents the total potential risk range involved in ODIs. Whilst there are downside risk reductions for selected metrics in the PFs, the increase in tier 1 ODI rate for leakage is the most significant difference contributor to the downside risk:

Table AN2.1: PF ODI summary

Summary table	Under performance	Out performanc	Under performance	Out performance
	as % of RORE	e as % of RORE	£m p.a. (average)	£m p.a. (average)
Maximum range	-7.4%	1.7%	-15.5	3.4
Range excluding C-MEX and D-MEX	-6.8%	1.0%	-14.1	2.1
10% to 90% probability	-3.1%	0.63%	-6.5	1.3
Excluding asset health and C-MeX / D-MeX	-2.4%	0.5%	-5.1	1.1
PR14 range (12/13 prices)[1]	-3.2%	0.6%	-10.9	3.3
Range excluding asset health	-4.8%	1.6%	-10.0	3.2

3 The equivalent analysis based on Ofwat's FD is shown below:

Table AN2.2: FD ODI summary

Summary table	Under performance	Out performanc	Under performance	Out performance
	as % of RORE	e as % of RORE	£m p.a. (average)	£m p.a. (average)
Maximum range	-7.5%	1.8%	-15.6	3.7
Range excluding C-MEX and D-MEX	-6.8%	1.2%	-14.2	2.5
10% to 90% probability	-2.90%	0.77%	-6.0	1.6
Excluding asset health and C-MeX / D-MeX	-2.0%	0.7%	-4.2	1.4
PR14 range (12/13 prices)[1]	-3.2%	0.6%	-10.9	3.3
Range excluding asset health	-4.6%	1.7%	-9.5	3.5

- 4 This shows a 0.2% increase in P10 downside risk. In our Statement of Case we highlighted ODI incentive changes which would have seen a 0.4% reduction in RORE to -2.5%.¹¹⁰
- 5 We have updated the Monte Carlo analysis to evaluate the ODI asymmetry and risk to reflect the CMA PFs. This is the same approach we used throughout developing our business plan and also in our Statement of Case.¹¹¹ The outputs are shown below

¹¹⁰ Bristol Water Statement of Case, paragraph 625.

¹¹¹ Bristol Water Statement of Case, paragraph 622 & Annex 9.





Figure AN2.1: Bristol Water ODI simulation outputs for CMA PFs





6 We have compared the results of the simulation to the same analysis for the Ofwat FD (outputs from the FD shown below). The median expected ODI underperformance has increased from £0.7m p.a. to £1.3m p.a. because of the increased tier 1 incentive rate for leakage. The P10 level is unchanged at -1.6% of RORE from Ofwat's FD to the CMA PFs. Therefore, as this is the higher "tier 1" leakage rate that has offset the other ODI improvements, whilst we support the ODI incentive changes in the PFs overall, it is imperative that there is sufficient base and leakage



enhancement expenditure allowances to avoid significant asymmetric downside risk from the leakage ODI. We consider this in section 16 on cost allowances.



Figure AN2.3: Bristol Water ODI simulation outputs for Ofwat FD

Figure AN2.4: Bristol Water ODI simulation outputs for Ofwat FD (RORE %)



ODI asymmetry analysis

7 We have reviewed the CMA's ODI asymmetry analysis and provide our comments, and suggested adjustments to the analysis in the table below. We show the CMA's PF analysis on the left and our view in the notes on the right.



Table	AN2.3:	ODI	asymmetry	y analysis
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	CMA		CMA PFs (BRL P10 es	P10 estiamte for net downside)		
	Maximum	Net	Maximum	Net	Note (test of P10:P90 approach to		
	penalty	dow nside	penalty	dow nside	net downside		
CRI	- 1.8	- 1.8	-7.155	-1.803	Reflect maximum at full range		
					Maximum was full range, but supply		
					interruptions has a net asymmetry		
					(e,g, third party). It is not just		
					asymmetry in rate that matters but		
Supply interruptions	-8.1	0	-8.074	-5.693	risk.		
					Maximum shows full range - net		
					value P10/P90. Full range net of		
					out/under performance would be -		
Leakage	-2	-0.3	-9.926	-7.276	7.433m		
					Reflects updated maximum (net is		
PCC	-3.4	-0.6	-2.278	-0.573	P10,P90). Full range net is - 1.563m		
					P10 level lower following 10		
Mains repairs	-6	-6	-9.844	-4.024	bursts/1000km deadband.		
					Updated maximum to reflect		
					deadband. Our track record means		
					outside of P10, so we don't consider		
Unplanned outages	-4.5	-4.5	-3.568	0	asymmetric		
Total	-25.8	-13.2	-40.845	-19.369			
Per annum	-5.16	-2.64	-8.169	-3.8738			
RCV	520.99	520.99	520.99	520.99			
Equity	208.396	208.396	208.396	208.396			
% RCV	-1.0%	-0.5%	-1.6%	-0.7%			
					Significant net asymmetry, compares		
					to -1.6% P10 from Monte Carlo		
% RORE	-2.5%	-1.3%	-3.9%	-1.9%	analysis and -0.5% Mean		

- 8 We highlight the justification for the adjustments from the CMA's PF approach to this analysis below:
 - (a) We show the maximum penalty as the full range (including outside of P10) and then consider the level of P10 asymmetry in the second column. For CRI this is presentational only, but indicates that risk and asymmetry exists outside P10 :P90 ranges.
 - (b) For supply interruptions, we consider that asymmetry estimates should reflect the difference between the level of penalty at P10 level, offset by P90 level of rewards. This is because there is clearly asymmetry in the level of risk that companies face on supply interruptions, given that no additional base cost allowances have been allowed (although the CMA PFs accept that there is likely to be additional costs ultimately reflected in base models to deliver better service levels).
 - (c) We do not think it is sufficient for ODI out and underperformance incentive rates to be balanced in order to conclude that there is not asymmetry. This is a particular factor for supply interruptions. The scope for reducing performance, compared to risks of underperformance from weather or third party events should also be considered in this analysis. These two conditions are both present for supply interruptions, and therefore, differently from the PFs, we believe supply interruptions should be considered to have an asymmetry as shown in the table above. As an illustration, in the first half of 2020/21 c.



50% of the supply interruptions were directly caused by third parties damaging our mains whilst undertaking their own works.

- (d) The CMA analysis for Bristol Water for leakage did not include the impact of the intervention on ODI tier 1 leakage rates. In the information provided following the hearings (August 2020), we explained the basis for the P10 and P90 leakage levels of performance, and therefore we calculate leakage asymmetry as the P10 fm underperformance potential less P90 fm outperformance potential.
- (e) We have updated the CMA's analysis for reflect the PFs ODI provisional amendments. We include our P10 assessment for mains repairs and unplanned outage. Together with PCC, these show less asymmetry than in the CMA PFs assessment.
- 9 We summarise the total P10:P90 range of the common wholesale ODIs below and the assessment, using the CMA's methodology, for the Bristol Water ODIs.

Table AN2.4: Summary common wholesale ODI asymmetry analysis

	Outside P10	P10	P90	Outside P90
Total common wholesale ODIs (including WQ contacts and leakage)	-19.2	-23.6	3.5	2.4
Average	-3.8	-4.7	0.7	0.5
% RORE	-1.8%	-2.3%	0.3%	0.2%
Asymmetry	-3.4	-4.0		
% RORE	-1.6%	-1.9%		

10 Our calculation of -1.9% P10 ODI asymmetry is c. 0.4% higher on than the CMA's calculation of -1.5%. As we show in the Monte Carlo simulation earlier, our expected net penalty was -0.5% RORE compared to the CMA's view that this was 0.1% to 0.2% (i.e. 0.35% higher based on our analysis).