October 2020

Reference of the PR19 final determinations: Risk and return – response to CMA provisional findings

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Amendment	Date
Page 67 – Table 4.6 and paragraph 4.38 contain a corrected calculation of the point estimate figure	3 November 2020

1. Summary

1.1 One of our overall aims in setting our price control determinations is to set an allowed return and incentive package that best aligns the interests of customers with companies and their investors. In our final determination we did so, carefully taking account of our duties. We have significant concerns that the CMA's provisional findings materially shift the balance of the risk and return package to the favour of investors, at detriment to customers.

1.2 In this document we set out our views that:

- The CMA has failed to carry out even cursory cross checks on the overall risk and return package it has proposed. In section 2 we set out the range of evidence the CMA panel should consider in order to protect the interests of customers. We encourage the panel members to engage directly with the evidence we set out.
- The CMA's proposal to 'aim up' the allowed return in the water sector is unnecessary. The CMA's 'aiming up' proposal addresses a problem that does not exist in the water sector and will provide investors with unnecessary windfall gains.
- Even before it has 'aimed up', the CMA has erred by overstating parameters that input to the cost of capital. The mechanistic process the CMA has applied to 'aiming up' places significant weight on the end-of-range parameters without adequate consideration as to whether the weight that is applied is appropriate.
- The low end of the CMA's stated cost of embedded debt range is overstated and the high end is materially overstated relative to the sector's actual costs. It is an error and a failure to protect the interests of customers not to carry out any cross checks when determining the cost of debt. We identify several errors in the CMA's calculation of its point estimate that - if corrected - would result in a lower proposed cost of embedded debt.
- There is upward bias in the ranges of individual parameters stated by the CMA in its calculation of the cost of equity:
- The CMA places significant weight on AAA-rated bonds in its calculation of the risk-free rate. This is unprecedented in regulatory decisions in the UK. We are concerned that in placing material weight on AAA-bonds, the CMA has upwardly biased its decision on the risk-free rate.
- The CMA's parameter choices informing its Total Market Return range skew it upwards. We identify several cases where the CMA omits data indicating a lower TMR range without discussion, or chooses to inappropriately pick assumptions that are either wrong or internally inconsistent – resulting in

higher estimates. Collectively these decisions favour the company side and constitute an additional layer of aiming up.

- The CMA has been inconsistent in its approach to excluding outlying parameters when constructing plausible ranges for unlevered beta and debt beta.

'Aiming up' is unnecessary and does not protect the interests of customers

1.3 The views we set out are supported by four expert reports. These reports individually provide compelling reasons to consider that the CMA has both 'aimed up' in its range estimates in arriving at its cost of capital parameters and has then 'aimed up' in the cost of capital range, for reasons that are not adequately explained.

1.4 The key reason cited by the CMA for 'aiming up' is to 'promote investment in the water sector more broadly'. This it believes is to cover the 'overall willingness of investors to commit capital to the sector, and therefore to ensure that there is continuing investment in the water sector'.[1] 'Aiming up' on the allowed return, while relevant in certain circumstances, is not appropriate nor relevant in the water sector and is likely to lead to significant harm to customer interests. We estimate that the approach, if applied to the sector, would cost customers about £1.9 billion over 2020-25 and is unlikely to have any positive impact on investment during this period or in the long term and indeed may reduce investment.

1.5 The CMA has not explained its reasons or set out an impact assessment, but in section 3 we assess the possible reasons for such aiming up and its applicability to water. The level of investment is determined by regulatory processes lead by independent regulators and is an input to price control determinations rather than being a response by a regulated firm to the setting of the allowed return. We explain that as a result of the regulatory incentive mechanisms that include revenue reconciliation, the cost sharing mechanism and outcome delivery incentives, any impact on incentives from aiming up is dominated by the package of regulatory incentives that apply. Nor is there good reason to think that aiming up would increase investment in the longer term beyond 2025. We see no lack of demand from investors to invest in this sector.

[1] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 671, paragraph 9.667.

1.6 Our analysis is supported by four expert reports, whose conclusions are set out at a summary level below:

- Brian Williamson considers the case for 'aiming up' in the water sector based on a review of the economic literature. He concludes the 'literature on aiming up starts from a number of assumptions, which do not necessarily hold in general and do not hold for the water industry in particular'. Williamson finds that the level of investment in the water sector is primarily driven by an investment planning process and incentive mechanisms relating to expenditure and outcomes. He concludes that 'in short, aiming up is a blunt and costly instrument in pursuit of a problem that has not been shown to exist'.[2]
- PwC, who analyse water company performance over the past four price control periods, compare the allowed return we have set to the evolution in required returns during price controls. This ex-post assessment provides a helpful indication of the likely effect of setting allowed returns at a different point to the midpoint estimate. PwC conclude that an 'aiming up' of the allowed return provides far less incentive than totex and ODI performance incentives for companies to invest in assets or improve performance. Drawing upon experience from the water sector over the past 20 years, PwC conclude that 'aiming up' is unlikely to result in more investment or to increase welfare for consumers, and based on evidence from past regulatory periods illustrate that this is more likely to drive higher dividends and shareholder returns.
- Wright & Mason, authors of the 2018 UKRN cost of capital academic study, provide an independent assessment of the CMA's parameter estimates for the cost of capital and the arguments for aiming up. They conclude the allowed return could even be very significantly below our allowed return of 2.96% - at 1.6% (in CPIH terms). In conclusion, the authors state 'we can see no merit in any of the CMA's arguments relating to aiming up. We think the CMA has anyway aimed up as it has gone along, both implicitly in its approach, and in setting ranges for the components of the cost of equity which already are high. The CMA present no real evidence for broader concerns about investment in the water sector; what evidence there is shows very healthy premia over RCVs. Its approach to compensating firms for missing performance targets is both perverse and disproportionate.'[3]
- Europe Economics state that 'the CMA's general approach to aiming up is flawed, both in terms of not setting out an adequate rationale for aiming up at all and more specifically for aiming up at what appears to us to be

[2] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, pp. 1-2
[3] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, pp. 26-27

approximately the 95th percentile of the CMA's distribution, rather than (as we assume it intends) something close to the 75th percentile' of the allowed return on equity.

1.7 A second reason for 'aiming up' is cited to be the asymmetry of ODI returns. The CMA estimates[4] that the average performing company could face a potential loss of 0.1% to 0.2% on its RoRE in 2020-25 with no potential for directly offsetting benefits. The CMA has provided insufficient explanation for us to be able to understand its calculation, despite requests for further details.[5] As explained in Annex A2, it appears to rest on incorrect assumptions, erroneous calculations and flawed data, and we consider the CMA to be in error in reaching its conclusion that there should be an expectation of negative ODI payments for an efficiently performing company. Moreover, the CMA has failed to scale such loss against its 'aiming up' and scope for financing outperformance that materially offsets and dominates against such loss. On the CMA's own figures, its 'aiming up' has a RoRE impact of at least 0.5%,[6] or 0.89%[7] against our allowed return on equity. This is before the significant expected outperformance that will arise on the CMA's allowed return on embedded debt.

1.8 The CMA has not felt the need to engage on the issue of alternative approaches to resolve a financeability constraint because of the approach it has adopted to 'aiming up'. Separately, the CMA states the notional level of gearing is not in dispute and so has not carried out further consideration of the gearing level that is appropriate in its determination. In taking these decisions, the CMA has failed to adequately consider our arguments on financeability.

1.9 We previously set out the approaches that could be adopted to address a financeability constraint. Changes to gearing levels and other options, such as use of net present value neutral adjustments and a faster CPIH transition, were cited as options that better balanced regulatory duties than providing a revenue uplift which is the effect of 'aiming up'. We ask the CMA to properly consider our representations on these issues in its final decision.

[4] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 672 paragraph 9.671.
[5] In a data request of 5th October, we asked the CMA to provide and explain the calculations underlying the 0.1-0.2% asymmetry on RoRE from ODIs. On 18th October the CMA responded with 4 excel files showing the calculations for each of the disputing companies. However, these provide no explanation of how the CMA has arrived at the assumptions and logic chosen and hence how the RoRE ranges have been derived.
[6] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 677 paragraph 9.685.
[7] 89 basis points calculated as the difference between the cost of equity set in our determination (4.19%) and the CMA's provisional decision (5.08%) in CPIH real terms.

1.10 In our view, the allowed return will provide companies and their investors with windfall gains and the ability to pay excessive dividends and will significantly weaken the incentive on companies to focus on delivering services that matter to customers. The CMA's higher allowed return will cost customers of the disputing companies £0.5 billion more than our determination over 2020-25. We are concerned that the CMA's provisional findings, if unchanged, would result in a very material and unnecessary increase in expected returns for investors across the water sector and other regulated sectors. In the water sector alone, this would cost £1.9 billion if applied at the sector level over 5 years.

1.11 We set out our detailed views on the reasons why the CMA should not 'aim up' the allowed return in section 3.

Allowed return on debt

1.12 With regard to embedded debt, Wright & Mason recommend that 'regulators should start from a position of being sceptical about allowing for the costs of embedded debt, for the simple reason that unregulated companies do not receive this kind of insurance from their customers'. We agree with the need for caution in the assessment of the cost of debt for the reasons Wright & Mason set out. Our policy of allowing for the cost of embedded debt itself recognises the importance of taking account of all of our regulatory duties and that companies raise debt over the long term. But it also means that considerable care should be applied in the assessment of a reasonable allowance for the cost of embedded debt, so that it does not provide an excessive allowance or pass undue cost and risk to customers. Such caution is not at all present in the CMA's provisional findings, where it proposes to double the length of the period used to determine embedded debt costs from used in previous Ofwat determinations or to ignore clear evidence that this overstates the actual cost of debt raised by water companies.

1.13 The CMA has chosen not to carry out any cross check as to whether its provisional cost of debt is reasonable. A cursory check of companies' actual cost of embedded debt from 2020 Annual Performance Reports demonstrates that the CMA's nominal cost of embedded debt allowance exceeds company actual costs in nine out of the ten largest water and sewerage companies.

1.14 The reasons given by the CMA for not carrying out any cross checks are that there are 'significant difficulties and complications' to use actual company debt

to calculate the cost of debt.[8] However, by failing to carry out such a cross check, the CMA is not protecting the interests of customers: it proposes to award an allowance above most of the sector's verifiable cost base without any justification as to how customers will benefit.

1.15 The necessary evidence to carry out such cross checks is available from published Annual Performance Reports in the form of company-reported weighted average nominal interest cost. We do not understand why the CMA would choose not to take account of such published information, especially when the time allowed for the reference is sufficient do so. As with company cost assessment data (which the CMA has felt able to draw on), this data is independently assured and is not the subject of dispute between ourselves and water companies. This is in contrast to the analysis submitted by companies and their advisers to date which we consider has focused on incomplete and outdated information on the debt instruments in place.

1.16 The CMA's dismissal of our well-established approach of placing some weight on actual company data in favour of an index-only approach prizes simplicity over customer interests and stability. Extending the logic of the CMA's proposals to the sector would mean that companies keep all of the outperformance against the index, while customers receive no share in this source of financing efficiency; this is inconsistent with the purpose of incentive based economic regulation.

1.17 We request that the CMA addresses the numerous issues and errors we identify in its approach. The most significant of these are increasing the length of trailing average for embedded debt to 20 years from 15, and its proposal not to make an adjustment to the market benchmark. We provide additional evidence that debt issuance in 2000-05 - which has persuaded the CMA to include this period in its longer 20 year trailing average - is largely attributable to non-operational financing. It has resulted from shareholder decisions to increase gearing levels to well above notional levels in order to distribute cash to shareholders, and thus is not relevant to the notional perspective. In addition, we have reviewed the company-sponsored analysis which underpins the CMA's decision to not adjust the benchmark. We provide analysis which suggests that water companies are able to issue at a discount to the debt indices used by the CMA, even after credit rating and tenor are accounted for. This suggests a downward adjustment to the cost of debt indices used by the CMA continues to be justified.

[8] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 590, paragraph 9.340.

1.18 We consider it paramount in particular that the CMA takes adequate time to carry out adequate cross checks of the allowed cost of debt ahead of its final decision – having regard to future price reviews (and price control reopeners) as well as the circumstances of the disputing companies. We propose a number of solutions which the CMA could explore to set a cost of debt more in keeping with the characteristics of an efficient benchmark, while retaining important features. We suggest there is common ground in the ultimate goal of a benchmark that no one company can influence, which retains good incentives to issue debt efficiently, and which allows customers to benefit from this efficiency over time. We comment on these issues further in section 4.

Allowed return on equity

1.19 Even without taking into account the CMA's decision to aim up, the cost of equity from its provisional findings contains errors and does not account for parameter uncertainty in an even handed way – there is a clear skew in favour of investors.

1.20 **Total market return** – The CMA's stated range of 5.25% to 6.25% (in RPI terms) represents a move up from its 5.0%-6.0% August final determination range for NERL RP3. The CMA's provisional findings use the same data, therefore we conclude that the higher range results from using changed assumptions and different weightings on evidence. Yet rather than evaluating the quality of inputs informing its ranges at subcomponent level, the CMA has in several cases simply taken the top end which yields the highest TMR figure without explanation. We agree with Wright & Mason that the most likely reason for the CMA's upward shift is placing greater weight on RPI: 'It seems odd that, despite acknowledging the likely upward bias of historic average returns, in light of forward-looking considerations, the CMA has ended up with an upper limit of its range so obviously at, or beyond, the range even of historic return averages. This choice, in turn, has a disproportionate influence on their final chosen figure, given their choice of the notional 75th percentile'. The CMA's stated range does not satisfactorily engage with the evidence that RPI is an upwardly-biased and deficient measure of actual consumer inflation which cannot easily be compared over time. Properly reflecting RPI's upward bias and the 20 year investment horizon chosen by the CMA, we show that the most plausible figure for TMR lies in the 5-6% RPI range, consistent with the CMA's NERL RP3 final determination.[9]

[9]CMA, 'NATS (En Route) Plc / CAA Regulatory Appeal: Final report', August 2020, p.232, paragraph 13.241

1.21 **Risk-free rate** – The CMA's approach departs from established regulatory practice by placing weight on AAA-rated corporate bonds. We agree with the conclusion of Wright & Mason that the CMA has not sufficiently considered the status of the marginal investor in water (a lender), and has thus misapplied corporate finance theory. This suggests that the correct risk-free rate should be at (or at least placing most weight on) the index-linked gilts rate than the corporate bonds rate. We also agree with Europe Economics that the academic literature does not require that all investors must be able to issue new debt at the risk-free rate used to apply CAPM and that being able to short the instrument proxying for the risk-free rate is sufficient. It would also seem that the use of corporate AAA bonds introduces material risk premia – raising the risk that new distortions may outweigh any benefit in terms of increased accuracy of the CMA's novel approach.

1.22 **Equity beta** – We agree with both Wright & Mason and Europe Economics that the CMA's provisional point estimate for its notional beta (0.76) is too high.

1.23 Wright & Mason analyse long-term raw equity betas and compare these to the range applied by the CMA. Wright & Mason conclude 'even before the CMA applies its aiming up correction by picking the 75th percentile, we argue that it has picked a range that is biased upwards. (We also argue that Ofwat has also been too generous in its own estimates) … and, given the use of a longer sample of data, we see clear signs of an upward bias in the way the CMA (and, by implication, Ofwat) have picked their ranges for beta' We encourage the panel to consider the evidence presented by Wright & Mason in Figure 9 of their report.

1.24 Europe Economics find that the CMA has adopted an inconsistent approach to its treatment of outlying data points in its ranges for unlevered beta and debt beta. It has included a zero debt beta in its range despite agreeing there is a compelling case that the regulatory model should include a positive debt beta (thus implying that zero should be an outlier). Europe Economics show that if the CMA adopted a consistent approach – either to exclude or include all outlying data points – from its debt beta and unlevered beta ranges, its overall equity beta range would be lower – at 0.65-0.79 or 0.65-0.78[10] – than the range stated in its determination (0.65-0.80).[11]

[10] Europe Economics, 'Responses to the CMA's provisional findings', October 2020, pp.11-12.
[11] We remind the CMA of the importance of beta, where a 1bp movement in beta results in an approximate 0.20% change in the allowed cost of equity.

Company-specific adjustments

1.25 We welcome the CMA's provisional decision to not allow an uplift to Bristol Water's cost of new debt, or cost of equity. It is reasonable given changes in financing conditions and Bristol Water's size as a company to capture this evidence when considering if such an uplift remains valid.

1.26 While we are disappointed that the CMA has awarded Bristol Water a 10 basis point uplift to its cost of embedded debt given our evidence that it is no longer a small company and that its higher cost of debt is not size-related, we welcome the CMA's decision that the case for awarding such uplifts in future will be significantly reduced.

1.27 The CMA has not included a benefits test as part of its provisional findings. We remain unconvinced that customers of smaller companies ought to unconditionally pay more for their water than customers of larger companies due to decisions of the owners to maintain current ownership structures in place. Our concern is that the CMA's decision will perpetuate incentives that embed inefficient ownership structures in place for customers who cannot choose their water company. We thus remain of the view that this mechanism protects customers interests by providing appropriate incentives for efficient ownership structures to evolve over time that serve customer interests.

Gearing outperformance sharing mechanism

1.28 The CMA's provisional decision to remove the gearing outperformance sharing mechanism ('gearing mechanism') leaves a gap in the regulatory framework.

1.29 The primary purpose of the gearing mechanism is to address distorted incentives for companies to choose financial structures with excessive gearing and so to incentivise companies to make responsible choices about gearing and consequently reduce the risk to customers of financial distress and special administration. We also note that the CMA agrees that there are important risks associated with poor financial resilience prior to reaching a default event and that these are an appropriate consideration as part of the regulatory financial framework.[12]

1.30 The mechanism is intended to address these issues by more effectively aligning the interests of investors and customers. We are concerned that, in the

[12] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 649, paragraph 9.587.

absence of the mechanism, perverse incentives remain that encourage companies and investors to have highly geared structures without bearing the full risks of these structures. Given this concern, if the CMA does not agree with the design of the mechanism, we think it would be more appropriate for the CMA to substitute a different mechanism, or amend the existing mechanism, rather than leave the concern unaddressed.

1.31 The CMA sets out that we have legitimate concerns that customers face costs where water companies have gearing well above notional levels, and this increase in gearing could have an adverse effect on financial resilience. However, the CMA proposes no remedy to address this issue, suggesting only that we should consider alternative remedies targeted more directly at specific financial resilience. We do not understand how this is consistent with the fact that the CMA is obliged to take the regulatory framework as it finds it. It also ignores the point that the regulatory regime requires a suite of measures to address different areas of concern.

1.32 The gearing mechanism is only one measure within a suite of measures we apply. We agree there are many factors that impact on financial resilience - the gearing mechanism does not and is not intended to address all financial resilience issues. It is intended to complement other regulatory tools such as the regulatory ring-fence and the special administration provisions but targeted at the specific concern that companies and shareholders are not bearing all the risks associated with deviating from the notional capital structure. There is nothing else in the regime that addresses this issue.

1.33 In reaching its decision, the CMA has failed to fully consider the evidence we provided on the relevance of Network Rail and Metronet, placing weight only on the experiences of Wessex Water and Dŵr Cymru. Although Wessex Water and Dŵr Cymru are of course in the water sector, those examples illustrate how our regime can work effectively to protect regulated companies (and their customers) from resilience problems elsewhere in the corporate group. As such, the CMA appears to have ignored our evidence and has made an error using them as examples where the ring fence has protected against the types of risk from high gearing of the regulated company itself. The specific risk that the gearing mechanism is targeting is the risk that is created within the structure of the regulated company itself, and here Network Rail and Metronet are the most relevant cases.

1.34 The gearing mechanism complements other regulatory tools such as the regulatory ring-fence and the special administration provisions in protecting customer interests. If the CMA retains its provisional position, the incentives for

these companies to make financing choices that are not aligned with the long-term needs of the sector will remain. We set out our reasons in section 5.

Structure of this document

1.35 The remaining structure of this document is as follows:

Section 2 – sets out the evidence we expect the CMA to consider in carrying out its crosscheck of the allowed return.
Section 3 – sets out our views on the application of a policy of 'aiming up' the allowed return in the water sector.
Section 4 – comments on the CMA's provisional decision on the cost of debt
Section 5 – comments on the CMA's provisional decision on the cost of equity
Section 6 – comments on the CMA's provisional decision on Company-Specific Adjustments
Section 7 – sets out our views in support of a gearing sharing mechanism

1.36 In **section 8**, we set out a number of our other concerns with the CMA's provisional decisions. These are issues are not summarised in other sections of our risk and return response, but it is important these issues are given due consideration by the CMA.

1.37 In **Annex A1** we set out that the CMA's approach to 'aiming up' is a material departure from recent and past CMA and Competition Commission practice.

1.38 In **Annex A2** we set out that we consider there to be errors in the CMA's calculations that lead it to conclude the average performing company could face a potential loss of around 0.1 to 0.2% on RoRE as a result of its performance on ODIs.

1.39 In **Annex A3** we set out our assessment of the relevance of Modigliani Miller theorem to the gearing mechanism.

2. The CMA has failed to cross check the level of the allowed return

2.1 The allowed return for the sector in the CMA's provisional findings exceeds the return disputing companies themselves requested in revised business plans. It is well in excess of the return required by investors and the companies we regulate, despite market evidence pointing to a lower required return than was set in our 'early view' of the allowed return provided in our PR19 methodology in December 2017. The CMA has failed to adequately cross check the return it has proposed – either at the level of the allowed return on capital or the component level of the allowed return on debt or equity.

2.2 If the CMA retains its provisional allowed return in its final determination, it will provide disputing companies with windfall gains and will have failed to adequately protect the interests of customers. In this section we provide evidence about the failure of the CMA to set a reasonable return.

Failure by the CMA to carry out adequate cross checks

2.3 The CMA has made an error in its failure to carry out adequate cross checks[13] of its proposed allowed return and has failed to take account of contemporaneous evidence on the allowed return. We summarise as follows:[14]

- The CMA has set an appointee allowed return which at 3.50% (real, CPIH) exceeds the level proposed by the disputing companies in their revised business plans of 3.40% (on which each company provided Board assurance that their business plan was financeable). There is considerable evidence that market expectations of the return required by investors has since fallen below 3.40% and that companies have been able to raise necessary finance to fund their investment programmes.
- Not only has the CMA erred in overstating the allowed return in almost every one of the components of the cost of capital but in addition, on top of that, it has aimed up the allowed cost of equity within its stated range.

[13] In this context when we talk about "cross checks", it is important to understand that this exercise is common place/best practice and should not be a discretionary exercise due to the additional level of assurance it provides. It is critical to perform cross checks in this area where there can be different results produced to "triangulate" with wider observable evidence to validify the results of the underlying methodology.
[14] The CMA proposes an Appointee allowed return of 3.50%, and a wholesale allowed return of 3.42% once adjusted for the retail margin. Our determination was 2.96% (Appointee) and 2.92% (wholesale).

- The cost of equity in the CMA's provisional findings is above the top end of the range of 2.93% to 4.82%[15] set in the CMA's most recent decision on the cost of capital for NERL, despite investors in the water sector being exposed to much lower levels of systematic risk.
- The CMA has failed to adequately assess the evidence from market to asset valuations of traded companies (despite explicitly having done so in its 2015 decision for Bristol Water).[16] We consider this provides strong evidence that the sector remains investible at our allowed return. Given the relevance of the CMA's decision to the forthcoming RIIO-2 determination in energy, we submit that the CMA should consider the evidence arising from the movement in the share price of National Grid and SSE following publication of the provisional findings – whose share prices rose by over 10% in the days following the publication of the provisional findings, compared with 0.85% for the FTSE 100. We previously set out that the listed water companies were trading at premia to RCV at were close to historic highs in the aftermath to our final determinations.[17]
- The CMA has made an error by failing to cross check the allowed cost of embedded debt with debt costs incurred by companies in the water sector – based on Annual Performance Report data reported by companies at 31 March 2020, 9 out of the 10 largest water and sewerage companies had an actual cost of embedded debt lower than the CMA's proposed allowance.
- The CMA's decision is more generous even than the view expressed by advisers to the disputing companies. First Economics, advisers to Yorkshire Water, recommended an average allowed return of 1.7%[18] (RPI, equivalent to 2.7% in CPIH terms) for the recent draft determinations for water in Northern Ireland;[19] this was lower than our final determination and materially lower than the CMA's provisional findings.

2.4 The only check the CMA has carried out is one of financeability and in doing so the CMA has aimed to target specified financial ratios in its assessment. If it is to protect the interests of customers, the CMA must also cross check all the components of its allowed return. A financeability assessment is a test only of

[15] CMA, 'NATS (En Route) Plc / CAA Regulatory Appeal: Final report', August 2020, p. 244, Table 13-17
[16] CMA, 'Bristol Water plc - A reference under section 12(3)(a) of the Water Industry Act 1991 – Report', 06 October 2015, p. 336-339, para. 10.201-208.
[17] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to the common issues in companies' statements of case', May 2020, pp.131-132, paragraph 4.121
[18] First Economics recommended an allowed return of 1.89% in 2020-21, falling to 1.55% in 2026-27. This included a post-tax cost of equity of 2.71% (RPI real), which compares to 4.14% in RPI terms in the CMA's provisional findings. Table 15, First Economics, 'PC21: NI Water's Cost of Capital - Prepared for the Utility Regulator', 30 March 2020, p.13.
[19] The Utility Regulator accepted and used the rate of return for its draft determination recommended by First Economics. Utility Regulator, 'Water & Sewerage Services Price Control 2021-27 PC21 Draft Determination – Main Report', September 2020, p. 16, para. 2.7.

cashflows. It should not be confused with a test whether the allowed return (or the components of it) is reasonable. We do not consider a financeability assessment, on its own, is an adequate check as it risks a regulator setting a determination specifically to meet the demands of investors, without adequate consideration of the interest of customers. Furthermore, as we set out in section 3, the CMA has failed to adequately consider our representations on financeability; it would be an error to use 'aiming up' as a methodology to target specific levels of certain definitions of financial ratios to solve a financeability constraint. Our previous submissions explained there are other, more proportionate approaches that should be considered.

2.5 By setting an excessive allowed return on debt and subsequently aiming up the allowed return on equity, the CMA may have met the criteria it has set for the financeability assessment but has erred by failing to carry out adequate checks to ensure the allowed return derived from its methodology is credible viewed in the light of other observable evidence.

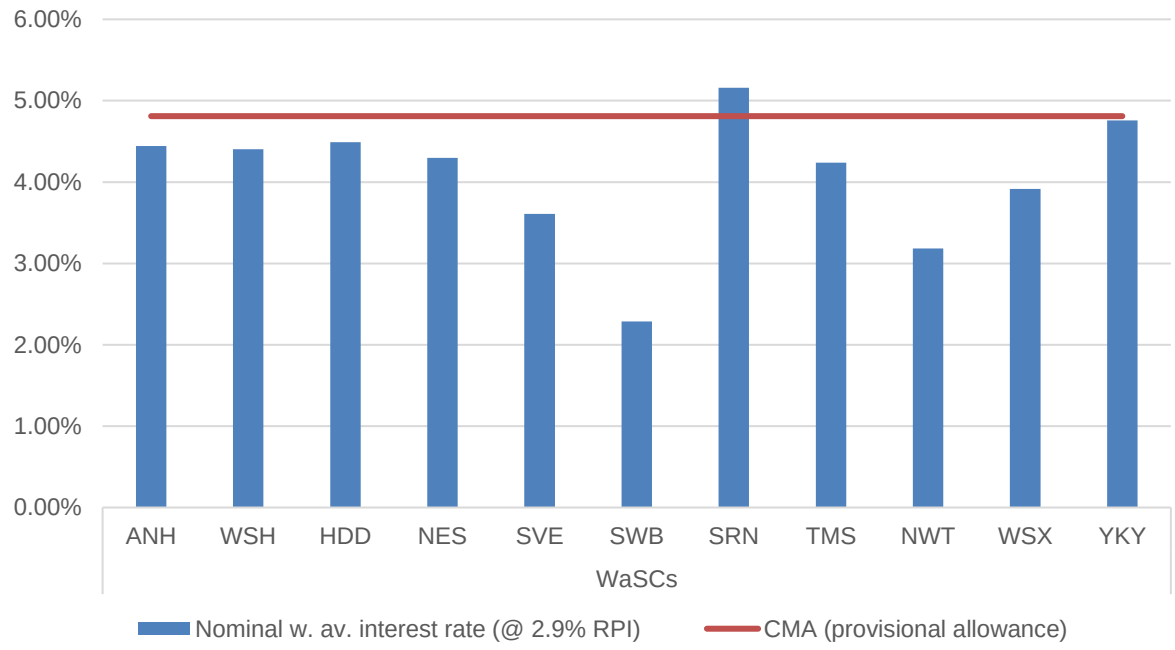
Evidence that the CMA's allowed return is excessive

2.6 There is considerable evidence that the allowed return in Ofwat's PR19 final determinations is sufficient if not over-generous. The CMA has not considered this evidence as part of its cross checks. This is an omission of relevant evidence from its assessment. We set out the most recent market evidence below.

Cost of embedded debt

2.7 The CMA has chosen not to carry out even a cursory cross check of the cost of embedded debt against the debt reported by companies in their Annual Performance Reports for the year ended 31 March 2020. Figure 2.1 shows the cost of embedded debt proposed by the CMA exceeds the cost of debt reported by all but one of the water and sewerage companies (which together account for 95% of sector borrowings). It is notable that the only company reporting a cost of debt higher than the CMA's figure is the company (Southern Water) that carries the lowest credit rating in the sector, at Baa3 with Moody's.

Figure 2.1 Actual cost of debt for large water and sewerage companies[20] and the CMA's proposed cost of embedded debt.



Source: Ofwat analysis of annual performance reports

Market to asset valuations

2.8 Unlike for our determinations, the CMA has the significant benefit of being able to observe how the market reacted to our final determinations, showing the market's view on the level of the allowed return.

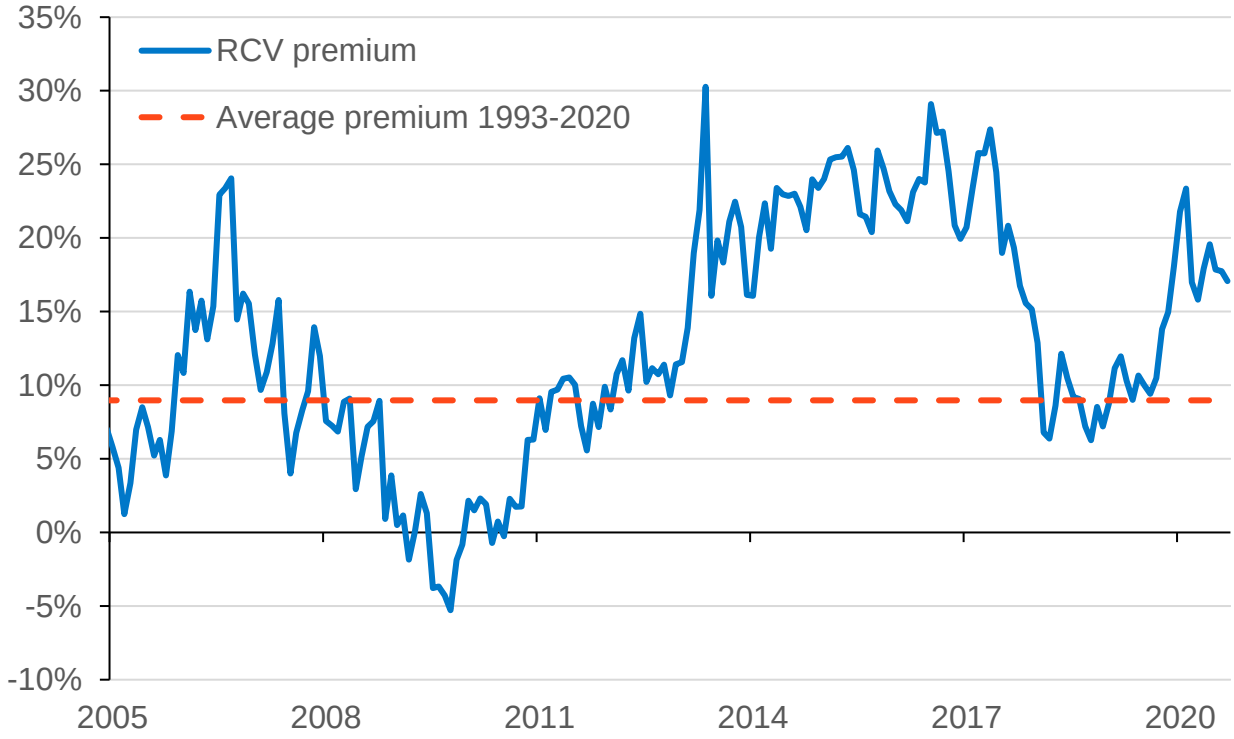
2.9 The market to asset valuation of the listed companies was at a material premium to the asset valuation following our final determination and has remained at a material premium to the asset value since our final determinations. Figure 2.2 shows the listed companies continue to trade at a premium of around 20% and have traded at material premia to asset valuations throughout 2020 (17% on average through September 2020), well above the long-term average premium of c.9%.

2.10 Wright & Mason reference 'the consistency of market premia … to be something that regulators should not simply ignore',[21] and by implication, data

[20] Published interest rates have been adjusted from an RPI assumption of 2.6% to a 2.9% assumption, consistent with the CMA's provisional decision on long-term RPI.
[21] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, p. 34

the CMA should factor into its decision making process in its final determination.

Figure 2.2 – Market to asset premia of listed companies



Source: Ofwat analysis of equity analyst data

2.11 We commissioned Europe Economics to carry out further analysis of the market to asset valuations to determine what the valuations might continue to signal about the allowed return. As in previous submissions to the CMA, Europe Economics' assessment leads it to conclude that even after adjusting for expected outperformance in 2020-25 and 2020-30, market prices for listed companies imply that the cost of capital allowed in our determination remains above the market cost of capital. [22]

2.12 Separately, as set out in the table in section 3, we consider the CMA has mischaracterised our previous submission on the MARs analysis.

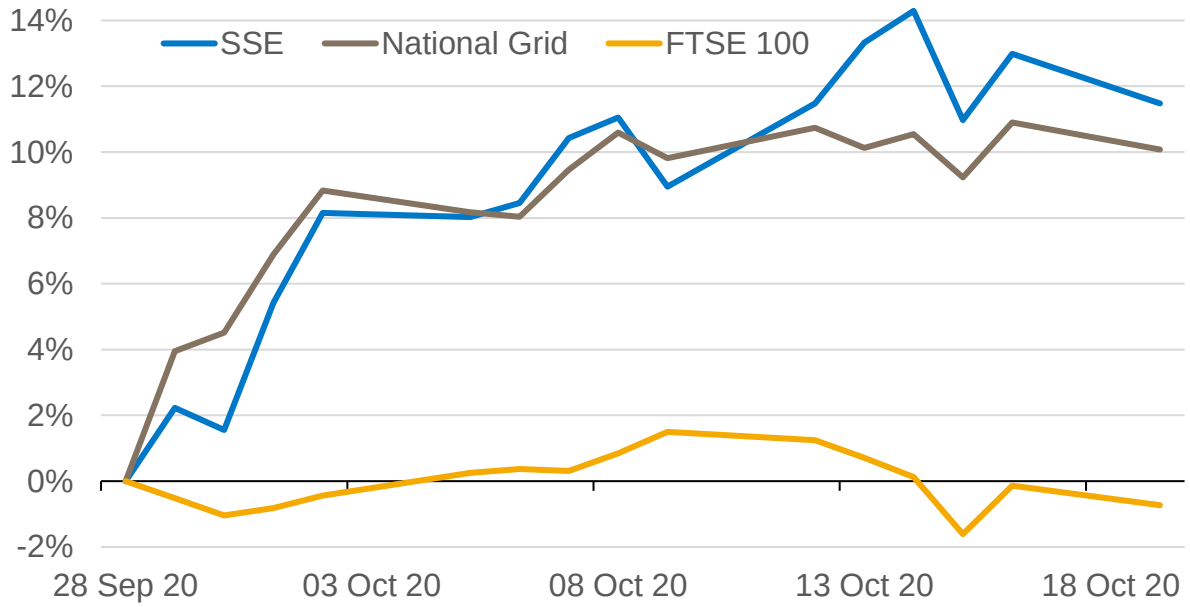
[22] Europe Economics, 'Responses to the CMA's provisional findings', October 2020, Appendix pp. 16-20

Evidence from listed energy companies

2.13 The CMA's provisional decision provides a further marker for the expectations that may arise for companies and their investors in the forthcoming determinations to be set by Ofgem.

2.14 In the ten days following publication of the CMA's decision, National Grid's share price increased by 10.6%[23] and SSE's share price increased by 11.1%,[24] outperforming the FTSE 100, which increased by 0.85% over the same period.[25] Barclays estimate the increased allowed return will allow National Grid to achieve a 9% nominal allowed return on equity, justifying a 25% premium to its regulatory asset base.[26]

Figure 2.3 – Percentage change in National Grid and SSE share price vs FTSE 100 index since CMA provisional determination



Source: SSE and National Grid share prices and FTSE 100 index

[23] National Grid, 'Share price download', Closing price on LSE - 28 September 2020 = 851.40 GBP, Closing price on LSE - 8 October 2020 = 941.60 GBP. (941.60 / 851.40) - 1 = 10.6% growth.
[24] SSE, 'Share Price Information', Closing price - 28 September 2020 = 1,189.50 GBP, Closing price - 8 October 2020 = 1,321.00 GBP. (1,189.50 / 1,321.00) – 1 = 11.1% growth.
[25] London Stock Exchange, 'FTSE 100', Closing 28 September 2020 = 5,927.93, 8 October 2020 = 5,978.03. (5,978.03 / 5,927.93) - 1 = 0.85%
[26] Barclays, 'National Grid – It might bet getting better – Upgrade National Grid to Top Pick', 01 October 2020, p. 1.

Credit rating agencies

2.15 The allowed return proposed by the CMA is above the level anticipated by the credit rating agencies:

- A week before the CMA published its provisional determination, Fitch commented that there was a risk that the re-determined WACC could be lower than our final determination. Fitch stated this was because risk-free rates and iBoxx indices had fallen considerably since December 2019.[27]
- Moody's commented on the provisional determination that the CMA's allowed return 'is higher than we had expected'. It noted that the 5.08% CPIH-stripped, post-tax cost of equity is above the 2.93%-4.82% range that the CMA used in its redetermination of NATS (En Route) PLC in July 2020, and above the 3.70-3.95% used by Ofgem in its draft determinations for certain British energy networks in September 2020.[28]

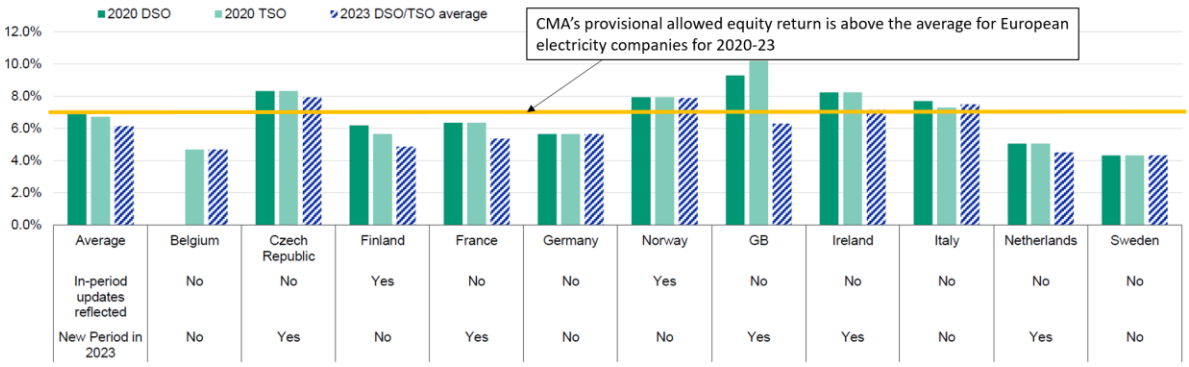
The CMA's provisional allowed return is high by international standards

2.16 Evidence on the allowed return from other regulated utility sectors is relevant to the CMA's decision.

2.17 Prior to publication of the provisional findings, Moody's stated that 'Ofgem's proposal for allowed equity returns is broadly in line with recent as well as upcoming regulatory decisions across Europe'. Moody's expected average allowed equity returns across the main European markets to be around 6% (nominal) by 2023. Moody's reference the Australian Energy Regulator as setting allowed nominal equity returns applicable from December 2018 as falling to the 'mid-4% areas for the five-year period starting in July 2020'. These figures are well below the CMA's provisionally proposed nominal allowed return of 7.18% (Figure 2.4). The CMA should note Ofgem's approach to setting the allowed return on equity is broadly comparable to the approach adopted in our final determination.

[27] Fitch Ratings, 'What Investors Want to Know: UK Water in AMP7', 23 September 2020, p. 4.
[28] Moody's, 'Sector Comment - CMA appeals give higher returns', 30 September 2020, p. 2.

Figure 2.4 - Current allowed equity returns (nominal, pre-tax) for European electricity network companies and the CMA's provisionally proposed allowed equity return



Source: Moody's Regulated Electric & Gas Networks – Cross Region, 8 September 2020[29]

Commentary from equity analysts supports a lower allowed return

2.18 Assumptions used by market analysts indicate an allowed cost of equity consistent with our determination rather than the figure used by the CMA (7.18% nominal).

- Barclays suggest a 6.0% nominal equity return is sufficient with an expectation that listed companies should trade at 25-30% premia to RCV based on a nominal achieved return on regulatory equity of 9-10%.[30]
- J.P. Morgan's June 2020 nominal cost of equity estimates used in its valuation of United Utilities (5.9%), Severn Trent Water (5.9%) and Pennon Group (6.1%) are all lower than our final determination nominal cost of equity, 6.27%.[31] We also note that J.P. Morgan has reduced its cost of equity figure for United Utilities from its May valuation of 6.3%.[32]
- Bank of America Global Research in May used the assumption of a 6.2% nominal investor cost of equity for the purposes of discounting: 'Our price objective of 2250p uses a 24% EV premium to Severn Trent Water's March 2021 RCV, computed by using a DCF analysis which assumes a 6.2%

[29] Moody's, 'Regulated Electric & Gas Networks – Cross Region', 8 September 2020, p. 3, Exhibit 2.
[30] Barclays, 'Pennon / UK Water – Reinstating rating on Pennon at EW, 1060p PT. Capital allocation is key. UU is preferred', 25 September 2020, p. 68 – Figure 99, p. 1.
[31] J.P. Morgan, 'Pennon: FY20 - Confident AMP7 outlook but capital return clarity needed, remain Neutral', 4 June 2020, 'Our DDM valuation assumes a post-tax cost of equity of 6.1%, higher than peers UU and SVT (5.9%) on account of PNN's riskier asset mix.'
[32] J.P. Morgan, 'United Utilities : Uncertainty around dividend will continue to weigh on shares near term, but valuation provides support, United Utilities', 22 May 2020, 'Our DDM valuation assumes a post-tax cost of equity of 6.3%.'

discount rate, 2.8% annual asset base growth and 1% RORE outperformance in each of the next regulatory period from 2020 to 2025.'[33]

- In its April 2020 note on Pennon Group, Credit Suisse states that it 'believe[s] that the returns are now set around the cost of capital' and uses 'a c3.3% cost of debt and c6.7% cost of equity...[which leads to] a c4.8% nominal cost of capital'.[34] We note that both Credit Suisse's nominal cost of equity and nominal cost of capital are significantly below the CMA's provisional findings. Further, its nominal cost of capital is below the 5.02% we allowed at final determination.

Evidence from within the water sector

2.19 We have seen enthusiasm from companies to bring forward and make new investment in respect of the 'green recovery' following our PR19 final determinations, which is contrary to the CMA's view there is a need to 'aim up' the allowed return to incentivise investment. Examples of such proposals that are in the public domain include that:

- Northumbrian Water proposes six separate schemes requiring additional investment of over £364 million. In addition, it proposes accelerating the second stage of its Tees and Central Strategic Transfer Pipeline Project, worth £22.9 million;[35]
- Anglian Water proposes to bring forward smart water systems schemes worth £150 million from AMP8, alongside the acceleration of £315 million worth of 'Amber' WINEP schemes;[36]
- South West Water proposes a number of areas for accelerating investment, including water resource, bathing water and event duration monitoring schemes. It also proposes several additional schemes, some of which are new proposals with some brought forward from AMP8.

[33] Bank of America, 'Severn Trent: FY19/20 results call feedback: dividend relief, but performance pressures', 20 May 2020, p. 2
[34] Credit Suisse, 'Pennon Group - Assessing options post the sale of Viridor', 14 April 2020, p. 10.
[35] Northumbrian Water, 'Green Economic Recovery – The Water Industry's role in building a resilient future', 10 September 2020
[36] CIWEM, 'Guest blog: Water companies should be central to a green recovery from Covid-19', October 2020

3. Aiming up the allowed return

The CMA's provisional findings

3.1 The CMA used four assessment criteria in its 'aiming up' assessment:

(a) Aiming up to promote investment in new assets in AMP7;
(b) Aiming up to promote investment in the water sector more broadly;
(c) Asymmetry of returns; and
(d) Other sense-checks on the overall level of the WACC.

3.2 In its assessment, the CMA proposes there is no reason to 'aim up' solely to ensure firms have incentives to undertake specific new asset investments in AMP7. It considers, however, that there are well-established arguments that underinvestment caused by a cost of capital being set too low damages the overall welfare of customers; that there is a long history of regulatory decisions highlighting the asymmetry of risk from setting the cost of capital too high or too low; and that the most common regulatory decision has been that some 'aiming up' has been merited to promote investment in a sector.

3.3 The CMA states there are broader considerations for considering an allowed return above the mid-point in its determination, relating to financeability and asymmetric risk:

- The CMA considers that penalty-only and asymmetric ODIs expose companies and their investors to asymmetric risk, with an average performing company facing a potential loss of around 0.1% to 0.2% on RoRE.
- The CMA considers the WACC to be the main driver of expected financial ratios and suggests if the WACC is set too low, notionally geared companies would not be able to retain strong investment grade credit ratings.

3.4 The CMA subsequently concludes that aiming away from the mid-point in its range is appropriate, citing a significant investment requirement in AMP7 and beyond, in particular in projects to help control and prevent climate change. It subsequently picked a point estimate between the midpoint and the top of its cost of equity range. It considered this represents the varying potential for error

in its estimates while adjusting also for asymmetric risks to customers without being unnecessarily generous to shareholders.[37]

A summary of our response

3.5 We strongly disagree that in the context of water, aiming up on the allowed return can be justified in terms of delivering benefits to customers.

3.6 The CMA has failed to articulate the means by which it considers aiming up benefits customers, nor has it considered how investment decisions are taken in the water sector or that the design of price controls protect water companies from demand uncertainty. The reasons the CMA articulates for 'aiming up', which focus mainly on attracting investment for discretionary spend, do not exist and are not relevant to the water sector. The level of investment is explicitly determined as part of the price review process, it is not decided by water companies in response to the level of allowed return. The majority of enhancement spend (some 70%) is required to meet environmental or quality obligations following appraisal by the Environment Agency or other regulators and Ofwat. The remaining discretionary spend, amounting to approximately £2.5 billion for sector at PR19 is subject to totex sharing if it is not delivered, and to some extent is subject to clawback mechanisms if it is not delivered under our outcome delivery incentives. The imperative therefore that exists in other sectors to induce investors to fund discretionary, often new, innovative, spend does not exist in water.

3.7 We do not consider that any of the theories as to how customers benefit from aiming up are relevant in water. We have considered each of the theories the CMA advance. Neither individually, nor collectively do they justify 'aiming up'.

3.8 When the CMA refers to 'aiming up to promote investment in the water sector more broadly', it is unclear whether it is concerned with investors providing finance to the water sector, or companies spending money to develop capital schemes beyond AMP7 – and so in our assessment we split the CMA's second criteria to consider both elements.

3.9 We set out our assessment against these criteria in more detail in the remainder of this section 3, but in summary:

[37] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 673, para. 9.675.

- **CMA criterion 1 - Promote expenditure on new assets in AMP7** – We agree with CMA's conclusion that aiming up does not encourage companies to undertake efficient new investment in AMP7. The incentive to invest is strictly weaker than the incentive to reduce cost from sharing of benefits and costs from out- and underperformance with customers.
- **CMA criterion 2a - Promote expenditure on new assets beyond AMP7 – willingness of investors to invest capital** – Regulatory incentive mechanisms evolve over time, but are underpinned by the long-term stability of the regulatory regime. This and the independence of economic regulation is recognised as important to investors. Transaction evidence shows that investors have confidence that efficient investment will be remunerated.
- **CMA criterion 2b - Promote expenditure on new assets beyond AMP7 – ensure there is continuing investment** – Much of the enhancement investment in the water sector is underpinned by a requirement to meet statutory requirements that is, to a large part, driven by environmental or quality objectives (70% of the enhancement investment set in the 2019 determinations was driven by environmental and quality drivers). There are risks that aiming up could either directly crowd out new investment or undermine the legitimacy of the sector which underpins long-term investment.
- **CMA criterion 3 - Asymmetry of returns** – the CMA has failed to consider key drivers of returns, failed to consider impact of asymmetric information and evidence of historical performance in its assessment that an average performing company could face a potential loss of around 0.1-0.2% impact on RoRE with no potential for directly offsetting rewards. We do not consider there to be an asymmetric skew taking account of the evidence on ODIs, and in any case, the extent of 'aiming up' very materially overcompensates for any potential skewness. The CMA has also failed to consider abundant market evidence that water companies are expected to outperform on both financing and operational performance in PR19.
- **CMA criterion 4 – Other sense-checks on the overall WACC -** The CMA has not explained the basis of which it has chosen to 'aim up' its cost of equity parameters. As shown by the evidence set out in section 2, we consider the CMA has failed to carry out adequate cross checks of its cost of capital parameter estimates. The CMA has made an error if its 'aiming up' is designed to set an allowed return that has, as an a priori objective, a requirement to meet set levels of financial ratios. Such approach is a disproportionate and untargeted response that risks a regulator setting a determination specifically to meet the demands of certain investors and their representatives, without adequate consideration of the interest of customers. A high bar should be applied in such circumstances and all

alternative options should be considered before adopting an 'aiming up' policy, including resetting the notional gearing level, the proportion of index linked debt and the speed of transition to CPIH to balance the interests of customers. We conclude that the CMA has not adequately considered our representations on the issue of financeability.

- **Bias in the 'aiming up' approach -** In its determination for NERL, the CMA considered bias in its cost of capital parameters as a criterion in applying its 'aiming up' framework.[38] We consider that the CMA should consider bias in its parameter estimates in assessing its allowed return, particularly because the CMA has adopted a mechanical approach to 'aiming up' the allowed return on equity. We are concerned that by aiming to midway between the midpoint and top end of the range for each of the cost of equity parameters, the CMA has not factored in the possibility that this may represent a higher percentile than 75%, and that its component ranges are already upwardly biased.

3.10 In justifying its decision, to 'aim up' the CMA has failed to consider the specific circumstances of the water sector. 'Aiming up' comes at increased cost to customers and should only be used where there are genuine benefits to customers. Williamson considers the literature on 'aiming up'; he sets out that 'aiming up' is used in telecoms, for example, to offset the risk that demand is insufficient to offset cost recovery absent price recovery.[39] 'Aiming up' can therefore be relevant in sectors where there is a need to incentivise discretionary investment or the returns associated with innovation are uncertain. [40]

3.11 Williamson notes that the literature on aiming up assumes that the firm has control over new investment and its timing. But these assumptions do not apply in the water sector, where the level of investment is an input to the price review determination and the majority of enhancement expenditure (70%) is driven by environmental or quality drivers and taken as part of statutory planning process. [41] Companies have little discretion to invest beyond the amounts allowed in their final determination. The design of the price control taking account of

[38] CMA, 'NATS (En Route) Plc / CAA Regulatory Appeal – Final report', p. 245, paragraph 13.290.
[39] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, p. 1
[40] Heathrow submitted a paper it commissioned by Oxera (Is aiming up on the WACC beneficial to customers?) which is referenced in the provisional determination. The CMA has given no consideration, for example, to the differences that might arise between sectors in the CMA's decision to 'aim up', which include differences in demand elasticities as referenced by Oxera. We contend that other factors should be considered in any consideration for 'aiming up' in water, including for example revenue reconciliation mechanism that provide certainty about revenue recovery over time, cost sharing mechanisms and outcome delivery incentives.
[41] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, pp. 1-3

incentive mechanisms means that companies are strongly incentivised to spend efficiently.

3.12 The CMA has also failed to carry out a cost benefit assessment of its 'aiming up' policy and it has not considered the damaging effects of aiming up. We estimate that the aiming up approach, if applied across the sector, would cost customers about £1.9 billion over 2020-25. The CMA would need to be able to demonstrate substantial impact on investment and that this forgone investment has significant benefit in order to justify such an approach. However, we can see little or no positive impact on investment and a potentially negative impact on future investment from aiming up and hence significant detrimental impacts to customers from the CMA's policy.

3.13 Damaging effects, as cited by Williamson, include increased incentives to capex bias, an increased incentive on companies to 'bid up' business plans and reduced incentives for efficiency. 'Aiming up' diminishes the incentive for companies to put forward stretching business plans as it allows investors easy returns. 'Aiming up' the allowed return provides companies the ability to earn excessive returns and unchecked scope to pay excessive dividend payments.

3.14 In any regulatory period there is a risk of a regulator setting the allowed return too high or too low. If a regulator 'aims straight' the interests of customers and investors should be met over time. We do not consider there to be benefit to customers if the regulator 'aims up' in successive determinations. Therefore, if the CMA maintains an 'aiming up' approach, it is critically important that the monetary extent of 'aiming up' is transparent, so that the cost to customers can be tracked, and returned to them in net present value terms in the future when such excess returns are no longer required.

3.15 If there are concerns that need to be addressed that 'aiming up' is intended to solve, we ask that the CMA more clearly sets these out. The problems the CMA may be seeking to solve can best be addressed at the source of the problem – asymmetric ODIs can be addressed with collars or revised incentive rates, indexation mechanisms can mitigate against in-period changes in market rates[42] and alternative approaches to financeability can be considered that are net present value neutral to companies and customers over time.

3.16 The potential for bias in the cost of capital range was specifically included as a criterion in the CMA's framework assessment of 'aiming up' in its recent NERL

[42] The determination already includes an indexation mechanism for the cost of new debt. The mechanism Ofgem has proposed for indexing the risk-free rate in its upcoming determination may provide benefits over a blunt 'aiming up' policy.

determination; we argue it should also be applied in water. The CMA has double counted its 'aiming up' by introducing bias to its choice of high and low estimates of individual cost of capital parameters (which we discuss in sections 4 and 5), and the subsequent application of a mechanical aiming up in its cost of equity parameters.

3.17 We have concerns about the very material impacts the CMA's chosen approach will have on the future of regulation in the UK – both in the water sector and beyond. The CMA's decision introduces a material and unjustified intervention that materially alters the overall balance of risk and return to the benefit of investors. Aiming up is simply not required or appropriate in the water sector where the level of investment is primarily determined out of planning process overseen by Government and regulators. It is hugely expensive to customers due to the large regulatory capital base. It will serve to weaken the incentives we have introduced to reduce the bias to capital solutions that was prevalent in the sector in the period from privatisation until PR14. It will weaken the incentives for efficiency, encouraging companies to further bid up investment requirements in future business plans and diminishing the incentives on companies to submit stretching business plans.

3.18 In the following sections, we set out our views on the arguments for aiming up using the framework set out by the CMA in its provisional decision, and the additional criterion of bias that was applied in the CMA's decision for NERL.

CMA criterion 1 - Promote expenditure on new assets in AMP7

3.19 We agree with the CMA that there is not a sufficiently strong case for 'aiming up' solely to ensure firms have incentives to undertake specific new asset investments in AMP7, so we do not set out a detailed appraisal of the arguments here. We consider the regulatory arrangements we have in place – including the requirements of the licence and the statutory framework, the certainty brought about by regulatory determinations, the regulatory commitment to the RCV and incentive mechanisms such as ODIs – incentivise companies to deliver the investment that is allowed for in our determination.

3.20 The regulatory framework rightly incentivises efficient delivery, providing incentives on companies for efficiency. The incentive to reduce costs from cost sharing on cost out and under performance strictly dominates the incentive to make profits from building new assets and earning the 'aiming up' profit over time.

3.21 In Appendix 1 of their report, PwC show that in a stylised example project during a price control period, the benefits of a 10% underspend increase the return by 264 basis points, whereas an overspend reduces the return by 126 basis points. As a result of the cost sharing mechanisms in place, the marginal benefits from underspending outweigh the marginal costs given the higher rates of return achieved from underspend – the incentive to underspend this is far greater than any 'aiming up' wedge. This is consistent with the aim of the regulatory regime more generally to incentivise efficiency.

3.22 'Aiming up' the allowed return to incentivise additional investment would therefore have to be accompanied by a revision to incentive rates (if indeed it were the CMA's aim to incentivise more investment). But this would undermine company incentives to improve efficiency, it would in effect remove the price control by rewarding all overspending of the cost allowance, potentially removing any incentive for efficiency.

3.23 Conceptually it may be appealing to consider that aiming up will spur companies to progress schemes with marginal cost-benefit cases. The existing checks and balances limit companies' ability to undertake large enhancement schemes and unless funding is allowed, aiming up will not compensate companies. Companies typically have smaller, more discrete maintenance projects, some of which may be marginal investment decisions. While aiming up might incentivise such expenditure it is hugely inefficient (as it applies to the entire RCV –see below) compared to adjusting ODI rates. In addition to ODI rates, companies should be incentivised to maintain their networks efficiently because of the possibility of enforcement action. The Environment Agency, DWI and Ofwat all have enforcement powers if there are negative outcomes arising from companies failing to maintain their networks.

CMA criterion 2 – Promote investment in the water sector more broadly

3.24 The CMA sets out that there are well established arguments that underinvestment caused by setting a cost of capital too low damages the overall welfare of customers (and potentially the wider economy) materially more than the welfare lost through bills that may be slightly too high.[43]

3.25 The CMA has not specifically referenced the 'well established arguments', or explained why they are valid for the water sector. We commissioned Williamson

[43] Competition and Markets Authority, 'Provisional findings report', September 2020, p.671, paragraph 9.667.

to consider economic arguments in the literature for 'aiming up'. Williamson references the literature on this topic, which includes Wright et al (2003), Dobbs (2011) and the UKRN academic study (2018).[44] As part of his analysis he explored whether, in the context of the water sector, 'aiming up' to promote investment could be motivated given a view that the welfare costs of less investment exceed those of more investment. [45]

3.26 Williamson explains the arguments for 'aiming up' relies on features which do not hold in water. A key reason is that in the literature the firm has to have control over new investment and its timing, and this does not hold in water. Investment allowed in our determinations is subject to an extended investment decision making process. Much of the enhancement investment in the water sector is underpinned by a requirement to meet statutory requirements that is, to a large part, driven by environmental or quality objectives. Investment requirements are to a large extent determined by the Environment Agency, and set in determinations by us as the economic regulator. We assess that 70% of the enhancement investment set at the 2019 determinations was driven by environmental and quality drivers.[46]

3.27 Both we and Williamson concur that arrangements that already exist in the water sector provide to encourage optimal level of investment and incentives for companies to invest, and limit the ability to over-invest. If the CMA considers the extent of investment to be suboptimal, that it would be necessary (and sufficient) to amended those arrangements, and aiming up has no benefit.

3.28 In the next sections we consider the two sets of arguments set out by the CMA regarding the need to promote the provision of finance, these being the willingness of investors to commit capital and to ensure there is continuing investment.

[44] Dobbs, 'Modelling welfare loss asymmetries arising from uncertainty in the regulatory cost of finance', Journal of Regulatory Economics, February 2011
[45] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020
[46] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, pp. 1-3

CMA criterion 2a - Promote the provision of finance to the water sector more broadly – willingness of investors to commit capital

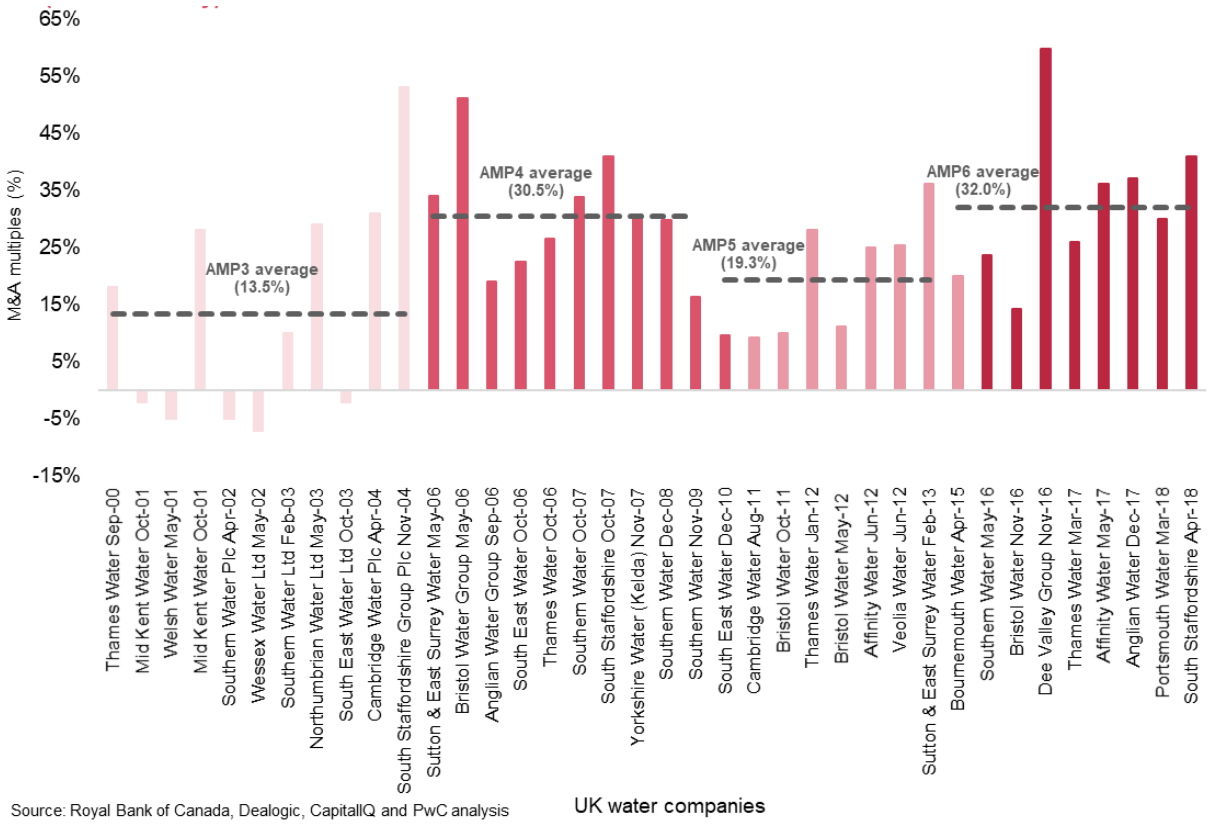
3.29 The CMA considers 'aiming up' is necessary to promote investment in the sector, including 'the willingness of investors to commit capital to the sector'.[47] The CMA states that it recognises the need for 'aiming up' is balanced, with market to asset valuations suggesting that investors would continue to provide capital at the allowed return set in our determination.[48]

3.30 Arguments that 'aiming up' is necessary to promote investment are entirely abstract and counter to market evidence. We set out in section 2 that the publicly listed companies continue to trade at a premium to the RCV and we show below, in Figure 3.1, there is no evidence of diminished values for private trades. Historic market-to-asset ratios (MARs) of private transactions in the water sector for the past four price control periods have on average recorded premia in the range of 13.5% in AMP3 up to 32.0% in AMP6.[49] These relatively high MARs provide no evidence of concerns by investors that there is a risk that efficient investment will not be remunerated; the contrary view that there is a consistent expectation that water companies will outperform either the return allowances or cost and incentive performance is a more compelling argument.

3.31 We are not aware of any evidence in analysts' reports that there has been any lessening of interest from investors for either equity or debt investments in the water sector. Furthermore, in their report, Wright & Mason explain the market to asset valuation evidence falls well short of sufficient reason for 'aiming up', suggesting that 'if the CMA has residual concerns about investment, then these could and should be reflected in the next price determination – that, after all, is the point of having regular regulatory reviews'.[50]

Figure 3.1 - Private transactions in the water sector have been at material premia to RCV, suggesting there is no lack of evidence from investors that efficient investment will not be remunerated

[47] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 671, paragraph 9.667
[48] Competition and Markets Authority, 'Provisional findings report', September 2020, pp.671-672, paragraph 6.699
[49] PwC, 'Review of the relationship between financing and water company performance', October 2020, p. 26
[50] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020



Source: PwC

CMA criterion 2b - Promote the provision of finance to the water sector more broadly – ensure there is continuing investment

3.32 The CMA considers 'aiming up' is necessary to promote investment in the sector, including to 'ensure that there is continuing investment in the water sector'.[51] It references the 'significant investment required within the sector over AMP7 and beyond, in particular on projects that help to control and prevent the impacts of climate change'.[52]

3.33 It may be intuitively appealing to consider that aiming up on the WACC at this price review will encourage companies to seek out and put forward more enhancement schemes for AMP8 and beyond, and in turn that will lead to additional expenditure on capital schemes in further AMP cycles, which will benefit customers by addressing a shortfall in capital

[51] Competition and Markets Authority, 'Provisional findings report', September 2020, p.671, paragraph 9.667.
[52] Competition and Markets Authority, 'Provisional findings report', September 2020, p.672, paragraph 9.674.

maintenance/enhancement. Such a conceptual theory is flawed and inconsistent with the realities of the water sector.

3.34 First, such an incentive requires an ongoing commitment to 'aiming up'. For companies to consider that there is an additional incentive to put forward new schemes they have to be able to expect to make supra-returns on those investments. This potentially increases uncertainty to investors because, as referenced by Williamson, excess profitability could be seen as failure to protect customer interests, which in time impacts on the legitimacy of regulation. Williamson also identifies a concern that this would also incentivise companies to simply inflate the costs of schemes that would, in any case, be proposed. Further, as new investors buy in the sector at inflated prices, aiming may become ineffective or require still further aiming up. Finally, the CMA has not explained why setting the allowed return at the correct level at the next price review would not provide the right incentive to invest.

3.35 Second, companies already have incentives to put forward capital schemes. While the introduction of totex was in part to reduce a capex bias, it is unlikely to have removed the bias entirely. In part this is driven by the fact that companies tend to trade at a premium to the RCV and increasing the RCV will increase investors' perception of the value of a company.[53] In addition, companies have incentives to put forward enhancement capital expenditure because we, and other regulators, have far fewer benchmarks, making it harder to judge efficient costs. The CMA recognises itself that it is easier for companies to outperform on enhancement spend[54] and outperform subsequent cost allowances.

3.36 Third, 'aiming up' is not required to address a risk that demand for new investment is uncertain. Williamson references that such arrangements have arisen in the telecoms sector, where demand risk has been a feature of investment in fibre networks, and an 'aiming up' approach avoided the need to judge uncertain demand in setting a price control, leaving companies greater incentives to make investment choices taking account of expected willingness to pay.[55]

[53] Strictly, investors should independently form a valuation of the company and premium should reflect the fact that the company is more valuable than the RCV. However, in reality investors are likely to factor in MARs from across the sector into their expectation of the value of a water company.
[54] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 264, para. 5.19
[55] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, p. 1

3.37 In contrast, in water, there is no such demand risk: the majority of the enhancement investment is driven by environmental and quality obligations. Regulatory mechanisms that provide companies and investors with certainty that efficient costs will be remunerated endure across price control periods, generally only with evolutionary changes.[56]

3.38 Fourth, increasing the WACC also has an offsetting effect against any incentive. The WACC is used by the Environmental Agency and Ofwat in appraising different schemes as part of the regulatory approval process. The costs of schemes are discounted into NPV terms using WACC. If the WACC increases, all schemes look more expensive and therefore the net benefit assessment is less likely to demonstrate schemes are beneficial. The WACC is also used by companies to test affordability and acceptability of business plans with customers, so an 'aimed up' WACC may crowd out investment from a business plan.

Is there a relationship between the ex-ante allowed WACC, the ex-post WACC and expenditure?

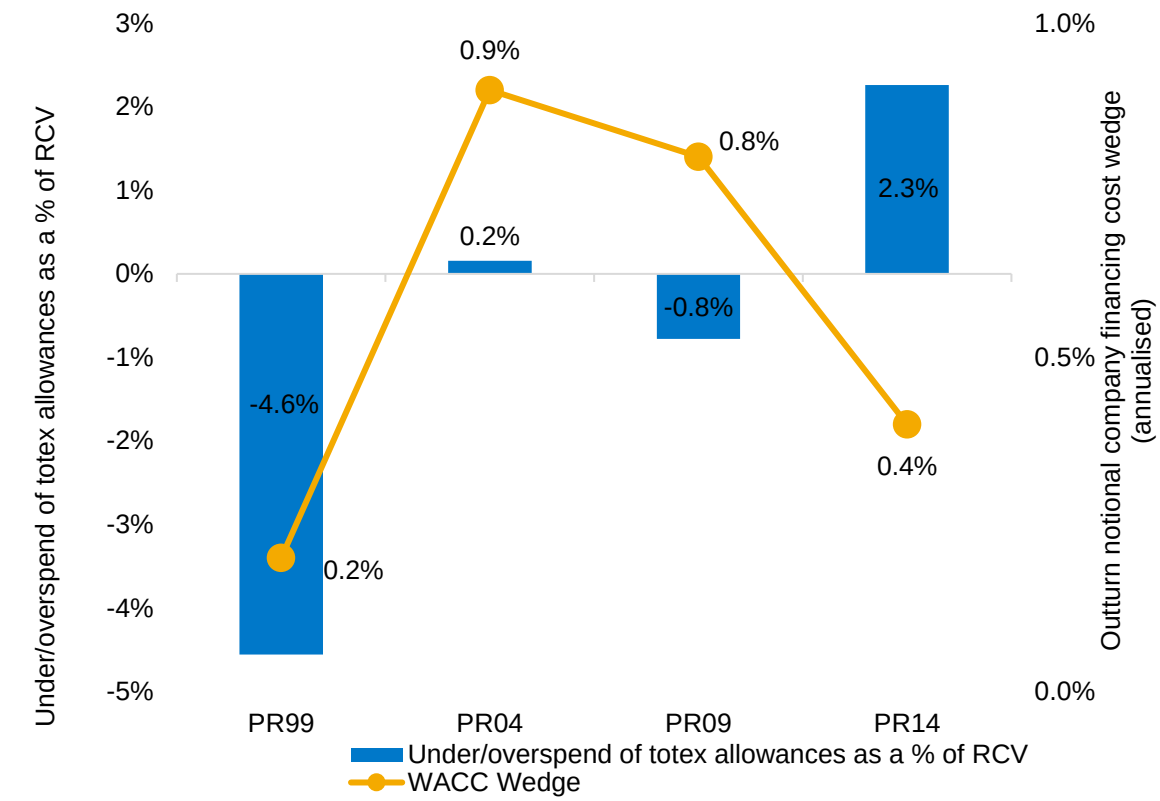
PwC investigated the historical relationship between WACC and company performance to understand what the consequences have been of setting the ex-ante WACC (i.e. the WACC set at the beginning of the price control period) lower than the ex-post WACC (i.e. the evolution in required returns during the price control period). This 'natural experiment' then allows us to observe whether higher than required allowances have led to changes in company performance in the past within the water sector.

PwC estimate the 'wedge' between the ex-post WACC (derived using outturn financial market data) the ex-ante WACC set in final determinations. Conceptually, as this wedge widens one would expect companies to have invested more than their regulatory targets if having a regulatory return higher than the true required return would incentivise additional expenditure.

However, the evidence shows no clear link between an allowed WACC being higher than required and company investment – the chart below illustrates there is no impact on increasing investment. But PwC find there is an increase in gearing, dividends and shareholder returns where the allowed WACC is higher than the required WACC.

[56] The PR19 wholesale revenue reconciliation mechanism, totex cost sharing and ODIs are examples of some of the several regulatory mechanisms that have endured from prior periods with only evolutionary changes.

Figure 3.2: Totex under/overspend (5yr) as a percentage of RCV and the difference between ex-ante WACC and ex-post WACC



Source: Ofwat, PwC analysis

3.39 Fifth, as mentioned in the PwC report, historical evidence has shown that in the past when companies have benefited from lower financing costs due to a wedge between the allowed WACC and the actual lower WACC caused by financial market movements, there has been no clear relationship with totex, capex or opex.[57]

CMA criterion 3 - Asymmetry of returns

3.40 Part of the CMA's justification for 'aiming up' the allowed return relates to some ODIs being penalty only or asymmetric, which it says expose companies and their investors to asymmetric risk. It suggests an average performing company could face a potential loss of around 0.1 to 0.2%[58] on RoRE, with no potential for directly offsetting rewards.

[57] PwC, 'Review of the relationship between financing and water company performance', October 2020

[58] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 672, para. 9.671

3.41 In carrying out its assessment, the CMA has failed to consider the impact of the full range of incentive mechanisms applied in the water sector which provide companies with the scope to outperform the regulatory determination. Taking account of the full range of regulatory mechanisms – including financing, costs and that PR19 provides companies with greater upside for outcome delivery incentive rewards than any previous determination - we consider that the distribution of returns for an efficient firm are unlikely to be meaningfully asymmetric and, if anything, are skewed upwards.

3.42 Furthermore, the CMA's expectation that ODI performance will be asymmetrically skewed downwards for an efficient firm is incorrect and misunderstands the nature of risk around performance in the sector. In this section we also set out that we do not expect negative ODI payments for an efficient firm (and indeed we think it likely that they will be positive).

3.43 In this section we provide evidence that:

- Company performance in past periods supports that companies have significant opportunities to outperform their determinations.
- There is significant scope for financing outperformance for the notional company in the CMA's provisional determination.
- The CMA's expectation that ODI payments will be negative is incorrect.
- If expected asymmetric performance is a concern, it is more appropriate, proportionate and targeted to adjust incentive mechanisms rather than 'aim up' the allowed return.

Company performance from past determinations provides evidence that companies have significant opportunities to outperform their determinations

3.44 In carrying out its assessment of the expected asymmetry of returns, the CMA has failed to consider all relevant regulatory incentives. In previous submissions to the CMA we have provided evidence of past performance across the sector. We update that evidence taking account of 2019-20 performance here. We request that the CMA takes due account of this evidence in reaching its final decision on the validity of adopting an 'aiming up' approach.

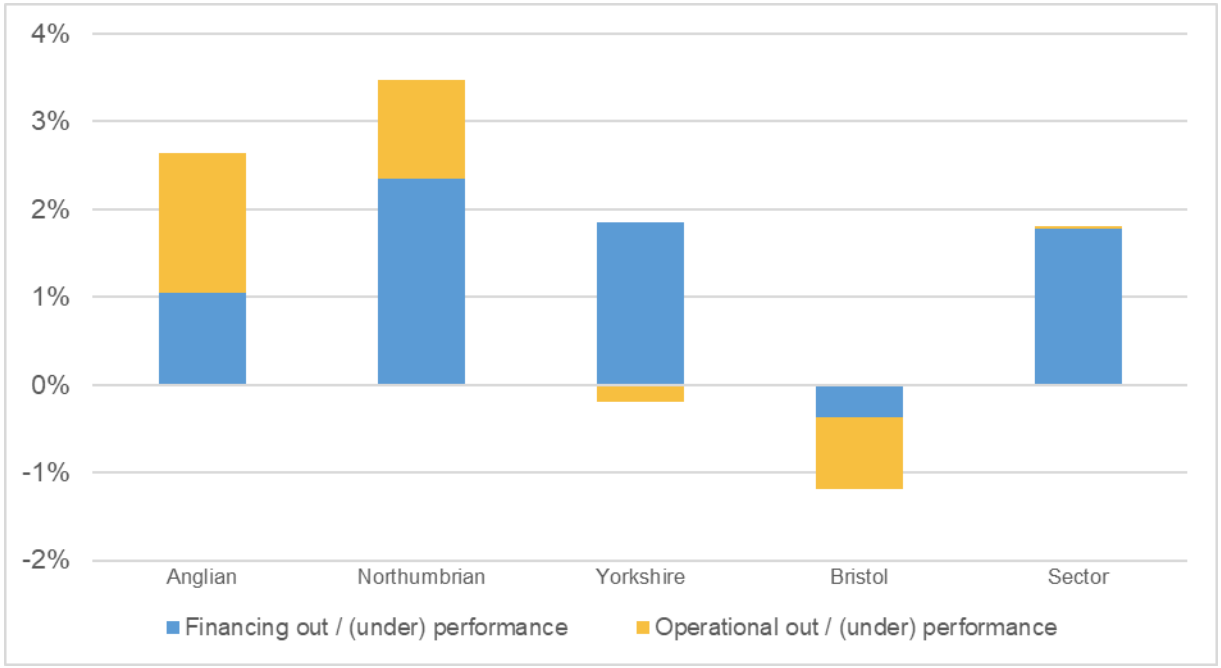
3.45 In each price setting period since privatisation, performance has been dominated by financial outperformance. The focus companies have had on financing outperformance has been a feature of reports into the regulation of the sector, for example by the National Audit Office who estimated companies made windfall gains of at least £840 million in 2010-15 from lower than

expected tax rates and interest rates, [59] and Citizens Advice who estimate the financial benefits to water companies were £13 billion between 2006 and 2019.[60]

3.46 In figures 3.3 and 3.4 we present the evidence on performance against PR14 and PR09. In both periods, financing outperformance has significantly dominated operational performance. Of the disputing companies, there is only one instance of financing underperformance – Bristol Water – whose performance is impacted by relatively expensive embedded debt and only two instances of operational underperformance – Bristol Water and Yorkshire Water in 2015-20.

3.47 Overall, these charts show the scope for financing outperformance is significant, equivalent to a notional RoRE impact of +1.26% in 2010-15 and +1.78% in 2015-20.

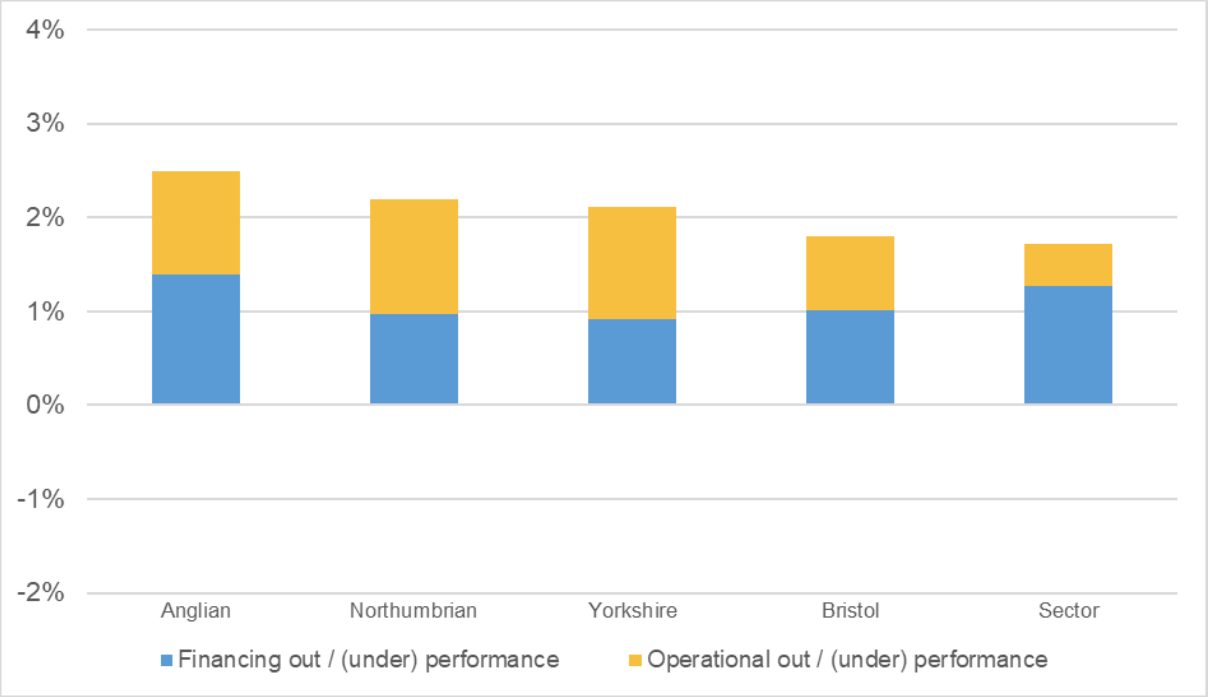
Figure 3.3: Financing and operational performance (real) measured against the notional structure (2015-20 Average)



Source: Companies Annual performance reports 2019-20 – Table 1F

[59] National Audit Office, 'The economic regulation of the water sector', October 2015.
[60] Citizens Advice, 'Monopoly Money, How consumers have overpaid by billions, May 2019 p.44, table 1.

Figure 3.4: Financing and operational performance (real) measured against the notional structure (2010-15 Average)



Source: Ofwat analysis based on data prepared by PwC for Balance of incentives: RoRE calculations

3.48 As set out in PwC's report, while outcome incentives are set with a downside skew the actual performance of companies has not been skewed towards the downside.[61] In the PwC report it is shown that while the ODI risk range from the PR14 final determination was -1.7% and 0.6% on RoRE, the actual average performance of the sector over the price control period was 0.0%[62], which lies at the upper end of the range (75th percentile). PwC show that a downside skewed set of incentives does not necessarily lead to a downside skewed performance.

3.49 A full consideration of skew needs to account for the frequency and size of potential upside and downside. In the 2015-20 period outperformance against expectations was greater than underperformance which offset the larger downside skew in the incentives that were set at PR14. Further evidence is provided on 2015-20 ODI performance between in Annex A2.

3.50 We have also revised our approach at PR19 to improve incentives to companies in other ways. The Service Incentive Mechanism (which had

[61] PwC, 'Review of the relationship between financing and water company performance', October 2020, p. 23

[62] This reflects a simple average of company performance in 2015-20. A weighted average leads to outperformance of 0.2% on RORE, as larger companies tended to outperform and smaller companies underperform in the 2015-20 period.

out/underperformance adjustments equivalent to +6% to -12% of retail revenue) has been replaced by the Customer Measure of Experience Mechanism (C-MeX) at PR19, with scope for symmetrical maximum and minimum performance adjustments (equivalent to +12% to -12% of retail revenue). A further factor that should improve expected returns in the 2020-25 period, compared to previous periods.

3.51 Finally, we remind the CMA that regulators are at an informational disadvantage in setting price control determinations; companies have a better understanding of their costs and context within which they operate. This was referenced by the National Infrastructure Commission who recommended regulators should not overlook these asymmetries.[63] It has also been recognised by Ofgem in the draft determination of its RIIO-2 controls where it applies an outperformance adjustment to its allowed return of 0.25% to take account of expected outperformance.[64]

3.52 The prevalence of outperformance in the sector is consistent with the widely recognised notion that regulators are at an informational disadvantage when setting targets. This suggests that if anything, the CMA ought to aim-down on the cost of capital to set an overall package that fairly rewards investors.

There is significant scope for financing outperformance for the notional company in the CMA's provisional determination

3.53 The CMA sets out that 'however effective our forecasting techniques, our estimate of the cost of equity will be subject to greater error than our estimate of the cost of debt, and the actual cost of equity for investors may ultimately be higher or lower than our forecast'.[65]

3.54 We consider the CMA has overstated the required return for both the allowed return on debt and the allowed return on equity even before it has 'aimed up'. And against our determination, the CMA's overstatement of the allowed return on embedded debt provides the notional company with 41bps of RoRE outperformance,[66] in addition to the 89 basis point uplift already included in its

[63] National Infrastructure Commission Strategic investment and public confidence, p.15
[64] Ofgem, Energy network price control 2021-26, draft determinations, finance annex, p.86, paragraph 3.164
[65] Competition and Markets Authority, 'Provisional findings report', September 2020, p.670, paragraph 9.665.
[66] The CMA's overstatement of the allowed return on embedded debt is 34 basis points against our determination. This translates to RoRE outperformance of 40.8 basis points for the notional company with average performance – calculated as 34 bps x proportion of embedded debt (0.8) x notional gearing (0.6) / notional equity (0.4).

allowed return on equity compared with our determination. In combination, these factors provide for material scope for the notional company to earn excess returns. We set out our rationale in sections 4 and 5.

The CMA's expectation that ODI payments will be negative is incorrect

3.55 Part of the CMA's justification for 'aiming up' the allowed return relates to the ODI package, which contains some penalty only and asymmetric ODIs.[67] The CMA says this exposes companies and their investors to asymmetric risk. It suggests an average performing company could face a potential loss of around 0.1 to 0.2% on RoRE, with no potential for directly offsetting rewards.[68] It appears to treat this potential loss for an average firm as the expected loss for an efficient firm. [69]

3.56 The CMA's expectation that ODI performance will be asymmetrically skewed downwards for an efficient firm is incorrect and misunderstands the nature of risk around performance in the sector. As explained in Annex A2, we do not expect negative ODI payments for an efficient firm (and indeed we think it likely that they will be positive) for three key reasons.

3.57 First, the CMA has not properly explained the reasoning behind its calculation that an average performing company would face a potential loss of around 0.1% to 0.2% of RoRE. Insofar as we can understand it, it appears to rest on incorrect assumptions, erroneous calculations and flawed data. In particular, it appears to have assumed that the distribution of performance is symmetric around the performance commitment level.

3.58 Second, there are a number of reasons why operational performance should offset any asymmetry in ODI rates. These include (a) management action to mitigate the impact of underperformance, (b) companies planning for outperformance, and (c) improvements in resilience. These combine to change the shape of the distribution of operational performance, making significant

[67] Competition and Markets Authority, 'Provisional findings report,' September 2020, p 478 paragraph 7.237 and p 672 paragraph 9.671.
[68] Competition and Markets Authority, 'Provisional findings report,' September 2020, p 672 paragraph 9.671-9.672.
[69] Competition and Markets Authority, 'Provisional findings report,' September 2020, p 478 paragraph 7.237 refers to the expected loss while p 672 paragraph 9.671 refers to the potential loss. To the extent that it is seeking to correct for this through an uplift to the WACC, we assume it is the expected loss rather than the potential loss that it is concerned with. We also assume the CMA is attempting to model an efficient company, as it would not provide correct incentives to compensate for ODI penalties arising from inefficient behaviour.

underperformance less likely and significant outperformance more likely, increasing the mean average performance.

3.59 Third, empirical evidence considering the distribution of outturn 2015-2020 company performance shows that, where outperformance occurs, it is on average twice as great as underperformance (even though companies said they expected negative payments at PR14). This positive skew in outturn outperformance more than counterbalanced any asymmetries in ODI incentive structures, and overall returns were positive. We show that this conclusion holds even if we correct for the fact that some performance commitments set in PR14 were not sufficiently challenging. Moreover, the increased upside available through ODI rates in PR19 relative to PR14, together with the increased resilience spend, suggests that even further outperformance is likely in PR19. This provides strong evidence that the CMA should expect overall ODI payments in the 2020-25 period to be positive.

3.60 We ask that the CMA takes account of these issues, which are explained in further detail in annex A2, in its final decision.

If expected asymmetric performance is a concern, it is appropriate to adjust incentive mechanisms rather than 'aim up' the allowed return.

3.61 Williamson concludes that 'aiming up' is a 'blunt and costly instrument'[70]. We consider that if the CMA concludes its determination package leads to an expected downside skew to returns, then it is better to address that through recalibrating the incentive package rather than the allowed return on equity.[71] In the CMA's provisional determination, this applies particularly across ODIs and financing, though it could also apply to costs.

3.62 Based on the CMA's provisional determination, we assess the cost to customers of 'aiming up' the allowed return against the cost to the disputing companies of a perceived asymmetric ODI skew. This shows 'aiming up' to be a policy that carries a very significant cost against a perceived asymmetric ODI skew for 'an average performing company'.

[70] Brian Williamson, 'Aiming up on the WACC and prices – the welfare and incentive impacts for the water industry', October 2020, p. 2

[71] We recognise that customers may not support increases to outperformance ODI but we also consider it unlikely that they would support the higher prices arising from aiming up. Given a choice between the two, they may prefer the former as it is at least associated with better outcomes for consumers.

Table 3.1 - Comparison of the CMA's 'aiming up' and perceived ODI asymmetric skew

Company £m (2020-25) 2017-18 price base CPIH	Average FD regulatory equity	Cost to customers of 'aiming up' 89 basis points	Cost to customers of 'aiming up' by 50 basis points	Cost to companies of a perceived asymmetric skew (0.1-0.2% RORE)
Anglian Water	3,195	142	80	16 - 32
Northumbrian Water	1,642	73	41	8 - 16
Yorkshire Water	2,749	122	69	14 - 27
Bristol Water	207	9	5	1 - 2
Sector	30,289	1,348	757	151 - 303

CMA criterion 4 – Other sense-checks on the overall WACC

3.63 The CMA sets out that it starts 'by recognising 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'.[72]

3.64 The CMA has set out the basis for its financeability assessment under which it concludes that the provisional determination for each disputing company is financeable and so fulfils its statutory duties.[73] In coming to this conclusion, the CMA sets out that it has made an assessment of the allowed return and wholesale totex requirements, in each case providing an increased allowance compared to our final determinations.

3.65 We do not know the basis on which the CMA has chosen to 'aim up' its cost of equity parameters to the 75th percentile as this is not explained. However, the CMA asserts that credit ratio analysis has a role in determining the weighted

[72] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 690, paragraph 10.58.
[73] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 700, paragraph 10.93.

average cost of capital.[74] If the CMA's 'aiming up' is designed to achieve target thresholds of certain financial ratios we consider it would be inconsistent with the application of all the duties that apply to Ofwat, and now the CMA, in determining price controls – that is, it is incorrect to set an allowed return that has, as an a priori objective, a requirement to meet set levels of financial ratios.[75] Such an approach is neither underpinned by statute nor rational assessment of a regulatory approach in which revenue allowances are reset every five years. It is also inconsistent with the regulatory approach Ofwat has adopted for at least the last two reviews. It risks over-stating the allowed return, resulting in windfall gains for investors.

3.66 If the CMA's 'aiming up' is designed to set an allowed return that has, as an a priori objective, a requirement to meet set levels of financial ratios, it is a disproportionate and untargeted response that risks a regulator setting a determination specifically to meet the demands of certain investors and their representatives, without adequate consideration of the interests of customers.

3.67 The financeability assessment can only be a check to test whether cashflows are adequate for a company with a notional structure to be able to access finance on reasonable terms. It should not be confused with a test whether the allowed return (or the components of it) is reasonable. As we set out in section 2, we do not consider a financeability assessment, on its own, is an adequate check as it risks a regulator setting a determination specifically to meet the demands of certain investors and their representatives, without adequate consideration of the interest of customers. It is imperative that the CMA carries out cross checks to test the reasonableness of its cost of debt and equity parameters using the evidence referenced in section 2.

3.68 In this section, we set out our views that:

- The CMA has not adequately considered our representations on financeability
- 'aiming up' leads to unwarranted windfall equity gains - there are alternative approaches that are more proportionate
- There are approaches that better balance the customer interest

[74] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 690, paragraph 10.59.
[75] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues on companies' statement of case', pp.106-107, paragraph 4.46.

The CMA has not adequately considered our representations on financeability

3.69 The CMA states the level of notional gearing does not appear to have been contentious. It also states that it has received no evidence that another level of gearing would better serve customers.[76]

3.70 In our response to companies' statements of case, we set out alternative mechanisms that the CMA may consider if the CMA disagrees that using financial levers is an appropriate solution to improving financeability. The alternative mechanisms included changes to the notional structure, including a lower level of notional gearing or increasing our conservative assumption for the proportion of index linked debt.[77] Presumably because the provisional determinations are financeable under the 'aimed up' allowed return, the CMA has not responded to our suggestions of how it could address a financeability constraint. As such we do not know what consideration, if any, the CMA has given to this evidence.

3.71 The allowed return is not the only driver of cash flow financial ratios, which are also impacted by depreciation of the RCV, the level of index-linked debt and modelled expenditure. Around half of the nominal return is indexation of the RCV, and so no proper assessment of return should ignore this element. A high bar should be applied in circumstances where 'aiming up' is used to target key financial ratios.

3.72 We submit that the CMA should carry out a full reassessment of all relevant factors before deciding on the extent of 'aiming up', particularly as it appears to be a motive for it 'aiming up'. This includes a reassessment of the level of notional gearing and other parameters that are relevant for the financeability assessment including the proportion of index linked debt and the speed of transition of the indexation of the RCV to CPIH.

'Aiming up' leads to unwarranted windfall equity gains - there are alternative approaches that are more proportionate

3.73 The components of the allowed return on capital, cost of debt and cost of equity, are determined by observable market data. Therefore, these

[76] Competition and Markets Authority, 'Provisional findings report', September 2020, page 510, paragraph 9.35 and 9.36.
[77] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statements of case', May 2020, pages 133-136, paragraphs 4.122-4.133.

components and the resulting overall allowed return on capital should be cross checked against market expectations and not against resultant credit ratios.

3.74 Our concern is that by 'aiming up' the allowed return on equity, the CMA is inadvertently adopting a policy akin to that of the application of revenue uplifts to address a financeability constraint, the problems of which we illustrate below.

Increasing returns at PR04 for financeability led to windfall gains for investors

In 1999 and 2004 we adopted a revenue uplift to price controls as a mechanism to improve financeability such that key financial ratios were no longer a constraint. Companies were not required to repay the revenue uplift at a future date resulting in an increase in customer bills, and increasing returns to shareholders without obvious benefits to customers.

The additional revenue for financeability reached over £200 million in 2009-10.[78] We estimated that in aggregate the PR04 price limits included additional revenue of around 1.0% in 2007-08 to maintain financeability, rising to around 1.3% by 2009-10.[79] The additional revenue varied between companies.

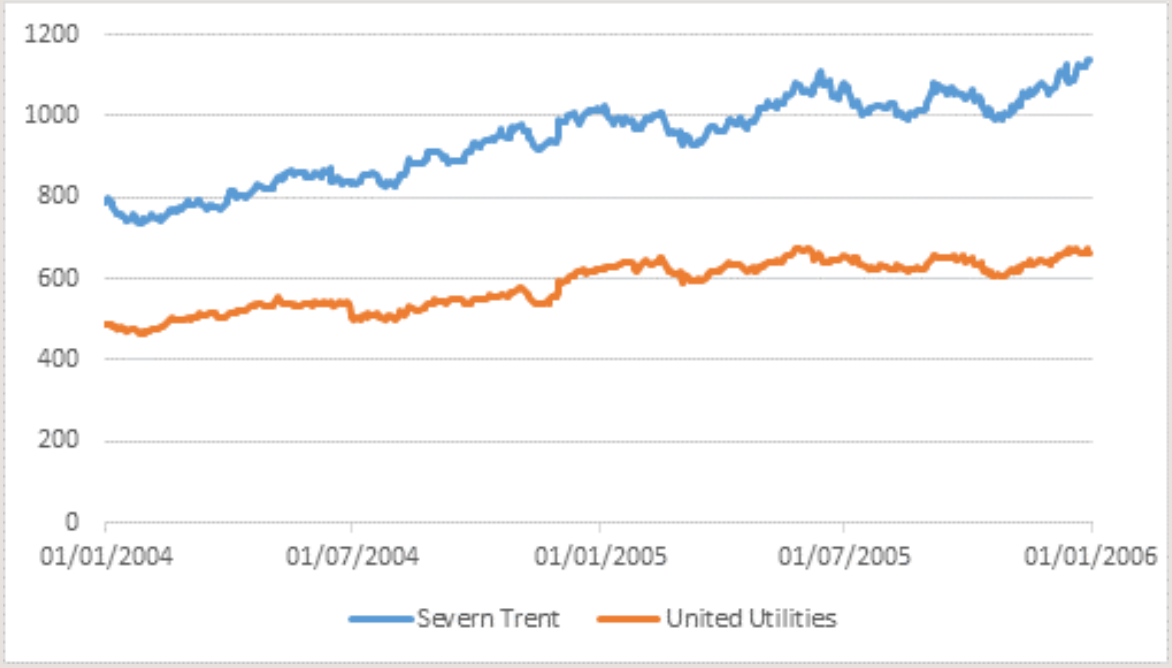
United Utilities and Severn Trent plc received £96 million and £44 million respectively over 2005-10. Ahead of the final determinations for PR04, a report by ABN AMRO stated that '…financeability will a big constraint resulting in an explicit or implicit higher allowed return than Ofwat's proposed minimum of 5.0% real post tax. As noted above, our approach to uplift revenue equates to an implicit higher allowed return.'

The share prices of United Utilities and Severn Trent plc increased substantially over the period around the final determinations and the start of the new price review period.

This highlights the risks to customers from adjusting allowed return to address cash flow issues and potential for windfall gains to investors.

[78] Ofwat, 'Future water and sewerage charges 2005-10, final determinations', December 2004, page 235, Figure 17.
[79] Ofwat, 'Future water and sewerage charges 2005-10, final determinations', December 2004, page 234.

Figure 3.5 Share prices for United Utilities and Severn Trent plc from 1 January 2004 to 31 December 2005



Source: Thomson Reuters

3.75 Reflecting wider concerns about the financeability approach adopted at the 2004 final determinations, a joint discussion paper from Ofwat and Ofgem in 2006, considered approaches to deal with a financeability constraint created by financial ratios.[80] Reflecting the lack of obvious benefits to customers of financeability uplifts, the paper discussed difficulties with trying to require companies to repay revenue increases in future periods creating uncertainty and the perception of additional risk.

3.76 Following on from the discussion paper, regulators adopted alternative approaches to addressing a financeability constraint:

- At PR09, we allowed equity issuance costs to strengthen the notional balance sheet for three companies as a more proportionate approach[81] and Ofgem proposes a similar approach in the financeability framework used in its draft decision for RIIO-2.[82]

[80] Ofwat and Ofgem, 'Financing Networks: A discussion paper', 2006
[81] This was accompanied by a clawback mechanism if equity was not issued in practice.
[82] See Ofgem RIIO-2 Draft Determinations – Finance Annex. The framework Ofgem applied in its determination is set out in paragraph 5.48.

- At PR14 and PR19, alongside the introduction of a totex regime and a revised and more flexible approach to cost recovery, we adopted PAYG and RCV run-off adjustments to address cash flow timing constraints.

3.77 The above approaches are more proportionate than the blunt application of an 'aiming up' policy.

There are approaches that better balance the customer interest

3.78 We have significant concerns that the CMA's 'aiming up' approach, will lead investors to generate excess returns with no benefit to customers for their increased cost.

3.79 Approaches to financeability that are net present value neutral to customers and companies over the long term are preferable to the approach favoured in the CMA's provisional findings, which, if implemented, sets a marker for investors to expect the allowed return to be 'aimed up' in future determinations at material cost to customers.

3.80 We submit that the CMA should revisit key assumptions that underpin its financeability assessment including the level of gearing, index linked debt and speed of CPIH transition, taking particular account of the representations we previously made.[83]

3.81 If the CMA retains an 'aiming up' approach we expect it to be transparent about the cost of aiming up to customers and to set an expectation that this will be recovered by customers in the future when it is not required.

3.82 Alternatively, consistent with our approach at PR09 and Ofgem's proposed approach for its forthcoming RIIO-2 determinations, we submit that if it is reasonable to set a lower level of notional gearing, it is reasonable to assume some equity issuance costs – this is far more proportionate solution than 'aiming up' the allowed return.[84]

[83] [83] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statements of case', May 2020, pages 133-136, paragraphs 4.122-4.133.
[84] See Ofgem RIIO-2 Draft Determinations – Finance Annex. The framework Ofgem applied in its determination is set out in paragraph 5.48.

Bias in the CMA's 'aiming up' approach

3.83 In its determination for NERL, the CMA considered bias in its cost of capital parameters as a criterion in applying its 'aiming up' framework (we consider CMA and Competition Commission previous practice in Annex A1, where we explain the reasons why such previous practice is not appropriate for the current determination). We consider the CMA should more explicitly consider bias in its parameter estimates in assessing its allowed return, particularly because the CMA has adopted a mechanical approach to 'aiming up' the allowed return on equity.

3.84 In this section, we comment on:

- Bias in the CMA's 'aiming up' – by adopting a mechanical approach to 'aiming up', the CMA has placed significant weight on the high and low estimates of its cost of capital parameters which are upwardly biased.
- Concerns about the use of the 75th percentile for the calculation of the cost of equity parameters.

Bias in the CMA's 'aiming up'

3.85 The CMA claims that its appointee cost of capital sits at the 58th percentile in its WACC range and so it has 'aimed' slightly above the midpoint of its cost of capital range.[85] The CMA's statement is misleading.

3.86 As set out by Europe Economics and Wright & Mason, the CMA has aimed up its allowed return on equity in two ways. The ranges used by the CMA to determine how its aiming up percentiles translate into point estimates are upward biased. The CMA has then 'aimed up' within these ranges. Wright & Mason explain for example, 'the CMA has chosen upper values for ranges that are supported by very few data points'.[86] Europe Economics make a similar point, stating 'the CMA's approach to its choice of ranges for each of the individual cost of equity parameters is conservative, amounting to a form of implicit aiming up. Hence its overall aiming up is double aiming up'.[87]

[85] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 673, paragraph 9.676.
[86] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, p. 22, paragraph 7.7
[87] Europe Economics, 'Responses to the CMA's provisional findings', October 2020, p.2

3.87 Examples of the CMA's implicit aiming up in the cost of equity parameters include:

a) the stated range for total market return which omits input data resulting in a lower range without explanation.
b) the stated range for the risk-free rate which is inappropriately high due to placing weight on AAA-rated corporate bond yields. D
c) the ranges for debt and equity beta, which adopt an inconsistent approach to excluding outliers that results in a higher point estimate for notional equity beta.

3.88 We discuss these issues further in section 5.

3.89 In respect of the CMA's stated range for the cost of debt, the low end estimate is overstated and the high end estimate of the cost of embedded debt is significantly overstated. The CMA's decision to choose its point estimate from the bottom end of the embedded debt stated range therefore creates a distribution of highly implausible upper-end allowed return figures, which make the level of aiming up look more modest. Our assessment of the cost of debt is set out in section 4.

3.90 The combination of factors stated above, mean that the CMA's stated ranges for its cost of capital parameters are upwardly biased and this makes that the CMA's statement that its cost of capital is aimed up to the 58th percentile misleading.

Concerns about 'aiming up' cost of equity parameters to the 75th percentile

3.91 In previous sections, we explained why 'aiming up' is not relevant to water. But based on illustrative assessments by Europe Economics and Wright & Mason, the CMA has aimed the allowed return on equity to a percentile that we consider to be materially higher than the 75th percentile.

3.92 The CMA's has provisionally decided to aim up on its cost of equity components, due to its view that these estimates are 'significantly more likely to suffer from error'. The CMA thus adopts a policy of picking cost of equity components midway between the midpoint and the top of the range.

3.93 As identified by both Europe Economics and Wright & Mason, the implications of this approach in terms the aiming up percentile are heavily influenced by the

distributional assumptions governing each component. Only if parameters are distributed uniformly (i.e. all points in the range have equal likelihood of occurring), and are independent of one another, will the resultant allowed return lie on the 75th percentile.

3.94 Europe Economics explain, 'ranges should be treated with care. The fact that the range for some parameter runs from X to Y does not mean that all points within the range X to Y are equally likely'.[88] In addition, the consultancy explains '…if the range for one parameter runs from X to Y and for another parameter runs from A to B, that does not imply that the overall range runs from a lower bound using A and X to an upper bound using B and Y. It might be very unlikely (or even impossible) that all lower bounds or all upper bounds occur together'.[89]

3.95 Wright & Mason state 'the use of a uniform distribution is acceptable when there is good reason to place equal weight on the top and bottom; it is an error when there is good reason to doubt equal weights. The effect of this is to over-state e.g. the 75th percentile'.[90]

3.96 As argued in the previous section, the CMA has at times chosen endpoints for its ranges that are supported by very few data points, making it doubtful that these endpoints are as likely as more central figures. If cost of equity components are normally distributed, this suggests that the CMA's approach will result in a percentile even higher than the 75th percentile. As explained by Wright & Mason,

> 'If, for example, we were to assume a normal distribution centred on the midpoint of the range, an assumed standard deviation of a quarter of the range (i.e., 0.25) would mean that the 75th percentile lies at 6.87%. This point is roughly two-thirds across the range, rather than three-quarters, leading to a gap of around 8 basis points. The value that the CMA takes to be the 75th percentile with a uniform distribution is the 85th percentile with a normal distribution.'

3.97 If all the components of the cost of equity are all normally distributed, the outcome is an even higher aiming up percentile. Europe Economics use Monte Carlo analysis to illustratively model the distribution of the allowed return on

[88] Europe Economics, 'Responses to the CMA's provisional findings', October 2020.
[89] Europe Economics, 'Responses to the CMA's provisional findings', October 2020.
[90] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020 p. 23

equity using the CMA's stated ranges and assuming that the standard deviation is ¼ of the range width.[91] Europe Economics find that the CMA's aimed up point estimate is at the 95th percentile of the overall range. We suspect that this is higher than the CMA would have intended had it chosen a percentile explicitly.

[91] Europe Economics, 'Responses to the CMA's provisional findings', October 2020.

4. Cost of debt

4.1 The CMA has provisionally set an overall cost of debt of 4.50% in nominal terms; higher than our final determinations allowance of 4.18% by 32 basis points. The CMA has used a similar structure to that which we used for our final determinations, taking account of embedded debt and new debt albeit it has made materially different decisions made around each component. We summarise the key differences below in table 4.1:

Table 4.1 – Cost of debt differences between the CMA's provisional finding and PR19 final determinations (nominal)

Component	PR19 FD	CMA provisional	Key difference in the CMA approach
Embedded debt	4.47%	4.81%	- No cross-check to company-reported cost of debt - No adjustment to index level to reflect water bonds' lower yield-at-issuance, on average. - Increase in iBoxx trailing average from 15 to 20 years. - Data cut-off of end July 2020. - Point estimate uses 'A' iBoxx index to reflect declining embedded debt cost over 2020-25
New debt	2.54%	2.38%	- Data cut-off of end July 2020 - No adjustment to index level to reflect water bonds' forecast lower yield-at-issuance, on average.
% share of new debt	20%	17%	- Point estimate is midpoint of CMA and Ofwat notional approaches - No uplift to reflect yield increase implied by forward rates.
Issuance and liquidity costs	0.10%	0.10%	
Allowed return on debt	4.18%	4.50%	- CMA allowance is 32bps higher than Ofwat FD allowance

4.2 In reaching its conclusion on the allowed cost of debt, the CMA has placed sole weight on the benchmark indices used in our final determination (The A and BBB-rated iBoxx GBP non-financials 10+yrs indices). For its embedded debt stated range it assumes a simple and unadjusted 20 year trailing average of the 'A' and 'BBB' indices. For its new debt stated range it assumes an unadjusted average of these indices based on a 6 month trailing average.

4.3 Our primary concerns around the CMA's approach focus on embedded debt:

a) **The allowed cost of embedded debt is overstated when compared to the sector's actual costs.** The CMA rejects on principle the value of using actual data even as a cross check to its benchmark-led provisional allowance, breaking with established practice in economic regulation and its own prior decisions. The CMA's provisional allowance would overcompensate 9 out of the 10 largest water and sewerage companies relative to their actual costs, as the indices it uses do not adequately capture water-specific financing factors. Extending the logic of the CMA's index-based proposals to the sector implies that companies will retain all of the outperformance against the index - with customers not benefiting; this is inconsistent with the purpose of incentive-based economic regulation.
b) **The CMA's 20 year trailing average assigns too much weight to earlier years**. The CMA justifies its use of a longer trail based on data suggesting material debt issuance in 2000-05. We demonstrate that much debt issued in this period is due to non-operational reasons and is thus not relevant to the notional perspective. A move to a 20 year trail would be harmful to perceptions of regulatory stability and could result in financial stress in a future environment of rising rates.
c) **The CMA's decision to not adjust its iBoxx-based trailing average is not supported by a balanced reading of the evidence.** We dispute the findings of the KPMG analysis supporting the CMA's decision to not adjust down its preferred iBoxx indices. Water companies do on average issue at a discount to the iBoxx A and BBB indices after controlling for tenor and credit rating. Even if this were not the case, the higher notional credit ratings from previous price controls would imply a rating higher than Baa1 (the iBoxx A/BBB average). This points to a continued role for a downwards adjustment to the iBoxx A/BBB indices when setting the allowed cost of embedded debt for the notional company.
d) **There are two additional important technical errors in the calculation of the CMA's index-led approach that should be corrected.** The CMA's provisional findings inappropriately use iBoxx data from March 2020 – July 2020 as embedded debt (this data also informs the new debt allowance). The CMA also picks a point estimate at the bottom of its state range to reflect mechanistically falling embedded debt costs over 2020-25 – but we consider the downward adjustment should be even greater.

4.4 We submit evidence in the rest of this section demonstrating that the CMA's provisional cost of debt allowance is overstated for the notional company and - in addition - most water companies, based on their actual costs. We urge that the CMA should in its final determination carefully consider the full range of

evidence it is privy to, having regard not just to the appropriateness of its estimate for the four disputing companies, but also the wider implications its decisions will have.

4.5 The rest of this section is structured as follows:

- **Section 4.2**: Embedded debt
- **Section 4.3:** New debt
- **Section 4.4:** Share of new debt

Embedded debt:

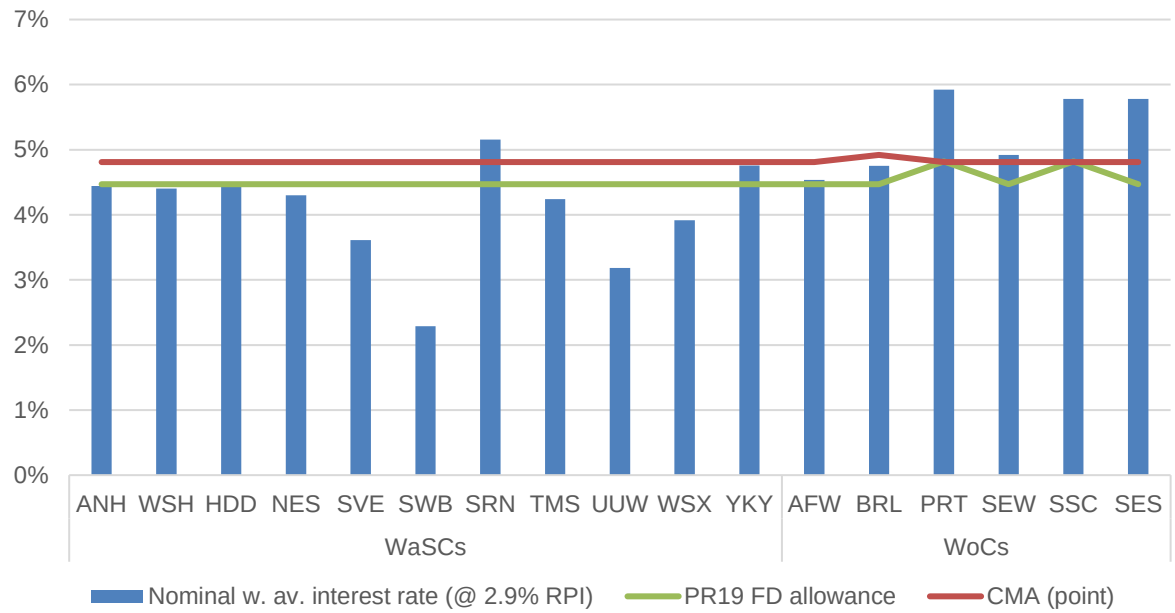
The allowed cost of embedded debt is overstated when compared to the sector's actual costs.

4.6 The cost of embedded debt allowance should be a reasonable estimate of the costs of an efficiently-run company under the notional financing structure. It is not possible to recognise this description in the CMA's point estimate of 4.81%, from a review of the March 2020 company-reported cost of debt from annual performance reports.

4.7 Figure 4.1 shows that the CMA's point estimate (which is at the low end of its stated range) lies significantly above the cost of debt implied by company submissions. The simple average cost of debt reported by companies in the 2020 annual performance reports was 4.50%; 31 basis points lower than the CMA's proposed allowance for embedded debt. Overall, the CMA's proposed cost of embedded debt would overcompensate the embedded cost of debt for all but one of the water and sewerage companies.[92] The companies that report a lower cost of embedded debt than the CMA's point estimate account for 89% of total sector borrowings. An allowance that would overcompensate so many companies relative to their true cost of debt cannot be recognised as 'efficient'.

[92] And the only water and sewerage company whose cost of embedded debt is above that provisionally set by the CMA (Southern Water) is a company with the lowest credit rating in the sector – Baa3.

Figure 4.1: Water sector actual cost of debt vs. CMA and PR19 allowances, as at March 2020 (nominal)



Source: Ofwat analysis of 2020 Annual Performance Reports
Note: Company figures are adjusted to reflect the CMA's assumption of 2.9% RPI, compared to the reporting figure of 2.6%

4.8 The CMA has nonetheless chosen not to carry out any cross checks on its proposed embedded debt allowance, citing 'significant difficulties and complications' in using actual data for this purpose.[93] It notes that high sector gearing could cause an average of such costs to be unrepresentative of the costs faced by a notionally-geared company.[94] In addition, it notes that an approach considering the efficiency of individual debt instruments would not be feasible within the redetermination timetable.[95]

4.9 We do not understand the CMA's blanket refusal to consider actual company data when determining its sector-level allowance. The placing of zero weight on actual data is a radical departure from the well-established approach in UK water regulation, breaks with the CMA's own approach in previous references,[96] and stands in contrast to the CMA's acceptance of company data for its decisions on cost assessment. We also note the inconsistency of the

[93] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 590, paragraph 9.340.
[94] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 590-591, paragraph 9.342(a).
[95] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 591, paragraph 9.342(b).
[96] For instance, the CMA's 2015 redetermination of Bristol Water's control was informed by a sector benchmark which used actual pricing for 22 water bonds to adjust the iBoxx index. (paragraph 10.68)

CMA carrying out a 'cross check' of its allowed cost of debt for Bristol Water using actual debt costs, but not the other three disputing companies.[97]

4.10 We agree that the CMA conducting an instrument-level review of ex-ante efficiency would not be practical within the CMA's current timescales; and that actual debt cost data should be considered in context of its relevance to the notional company. Our request to the CMA to cross-check against top-down actual cost data is modest in terms of time commitment, however. The requisite data (which we provide alongside this submission) is readily available from published and externally assured Annual Performance Reports (APRs), and is not in dispute between ouselves and the companies. This is in contrast to disputing companies' earlier submissions on cost of debt, which have been superseded by the APR data – and where we have concerns around the completeness of the analysis.

4.11 The sector's higher gearing is not a sufficient reason to discount all actual cost data. We would expect the sector's weighted average gearing (73% compared with the notional 60%) to place upwards pressure on debt costs. The fact that the March 2020 company average nominal interest cost (4.50%) is already lower than the CMA's point estimate (4.81%) is compelling evidence that the latter cannot be an efficient allowance for a company at the notional gearing. In addition, Severn Trent and United Utilities are good proxies for the notional company geared at 60%, having gearing of 64.9% and 67.7% on March 2020 and being rated Baa1 and A3, respectively. The weighted average nominal cost of embedded debt of these companies as cited in Figure 4.1 is 3.61%% and 3.18%.

4.12 We and the CMA recognise the value of the iBoxx A and BBB indices in providing independent data points to inform an efficient allowance. There is however substantially less value in an independent benchmark that systematically overcompensates the majority of the sector. It is thus important that cross checks are carried out to consider how the index-based allowance relates to the actual costs of the sector – and also to explore to what extent there are implications for its suitability as a proxy for the notional company's costs. We see no evidence based on its provisional findings that the CMA has attempted such an exercise.

4.13 Important features of financing in the water sector which the iBoxx A and BBB indices used by the CMA do not capture are:

[97] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 625, paragraph 9.491.

- **Timing**: The sector has largely managed to avoid issuing in historically high-cost periods (for example in the immediate aftermath of the 2008 financial crisis). This is not recognised by simple trailing averages which assign equal weight to each year.
- **Tenor:** The weighted average years-to-maturity of the iBoxx A/BBB 10yrs+ index over 2000-2019 is too long, at 19.4 years, compared with the current 13.2 years for the sector.[98] Furthermore, basing the tenor calculation on iBoxx data alone is an error, as for example, company balance sheets include short term bank debt that is not reflected in the iBoxx benchmark. Shorter tenors are typically associated with lower yield. We have previously submitted evidence that tenor-at-issuance has followed a declining trend since 2008.[99]
- **Credit rating:** Companies have in previous price controls been funded to achieve a higher notional credit rating than the current weighted average credit rating of the iBoxx A/BBB constituents (Baa1). A higher credit rating in historic price control determinations should have the effect of placing downward pressure on interest costs.
- **Floating rate debt:** The company-level average share of floating rate debt is 13%. The yield on floating rate debt is typically determined by a benchmark (e.g. Libor) and a fixed margin. This means that the yield on floating rate debt will reflect currently lower market-wide interest costs rather than more expensive historic costs. The methodology for compiling the iBoxx A and BBB indices specifically excludes floating-rate debt.[100]
- **European Investment Bank debt:** The EIB has historically provided around £17 billion of lending to the water sector.[101] The EIB's loans are widely recognised as being amongst the sector's cheapest financing sources – Moodys concluded that on average EIB debt carried yields around 100 basis points lower than the sector's embedded debt on March 2016.[102] As non-traded instruments, EIB loans are not eligible for inclusion in the iBoxx indices.

4.14 The approach to setting allowances for embedded debt has hitherto succeeded in combining strong incentives to issue debt efficiently while allowing customers to benefit from these efficiency gains at 5-yearly regulatory resets. The key components of this approach are a notional benchmark (giving companies a

[98] Source: 2000-2020 average of iBoxx A/BBB years-to-maturity and March 2020 weighted average years to maturity for water companies.
[99] Ofwat, 'Risk and return – response to common issues in companies 27 May submissions to the CMA' p.25, Figure 3.4.
[100] IHS Markit, 'Markit iBoxx GBP Benchmark Index Guide', p.7.
[101] Source: EIB, retrieved 26/10/2020. Water investment figure of €18.703m converted using 26/10/2020 exchange rate of £0.91.
[102] Moody's, 'Moody's: UK water sector outlook stable into 2017, but long-term challenges remain' 12 October 2016

target to outperform which no single company can easily influence), and allowances that reflect this outperformance in the form of more stretching targets over time (resulting in lower bills).

4.15 The CMA's proposals to rely exclusively on an unadjusted trailing average of iBoxx indices, absent any consideration as to the validity of data point outputs from the CMA's application of the index, would seem to promote a system whereby companies capture all of the gains from outperforming the index with no passage of benefits to customers. This is contrary to the intent of incentive regulation.

The CMA's 20 year trailing average assigns too much weight to earlier years.

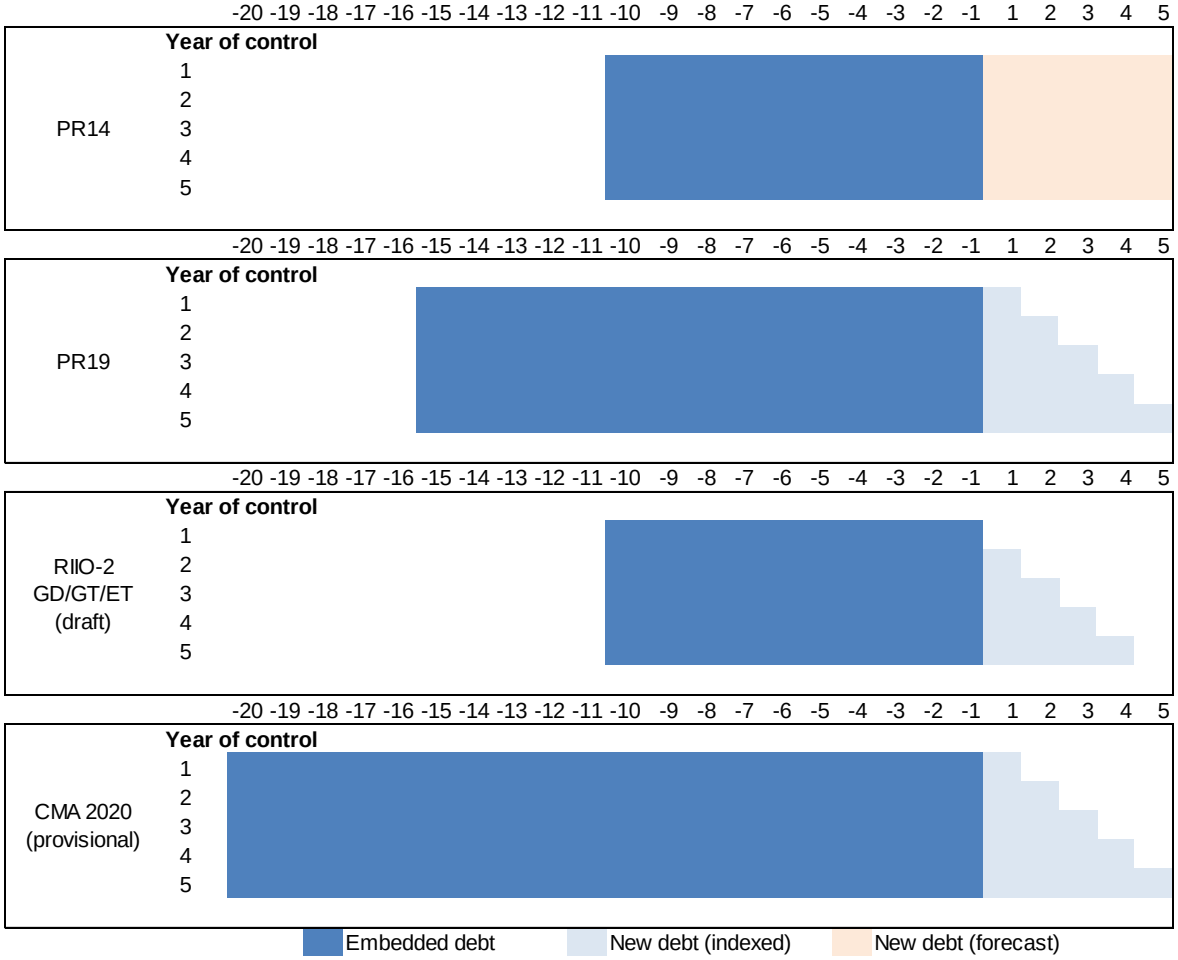
4.16 The CMA bases its embedded debt on a 20 year trailing average of the iBoxx A and BBB indices calculated up to the end of June 2020. The CMA argues that 20 years is a more appropriate estimation window than 15 years based on its similarity to the average years to maturity (19.4 years) of the combined iBoxx A/BBB index, the long-term nature of debt financing within the water industry,[103] its 20 year investment horizon for CAPM parameters,[104] and analysis suggesting that around 20% of outstanding debt was issued longer than 15 years ago. In addition, the CMA raises a concern that the use of a shorter trailing average may incentivise companies to shorten tenor-at-issuance, increasing refinancing risk.[105]

4.17 Putting aside the somewhat artificial distinction between embedded debt and new debt, the overall length of the trailing average proposed by the CMA is 22.5 years.[106] As set out in figure 4.2, this length of trailing average represents a radical shift from the 10 year trailing average featured in the recently-concluded PR14 control period (2015-2020). The CMA's proposed trailing average is significantly longer not just compared to recent water determinations, but also to Ofgem's recent RIIO-2 draft determination proposal of an extending 10-14 year trailing average. It is also longer than the 10 year

[103] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 594, paragraph 9.356.
[104] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 594, paragraph 9.358.
[105] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 594, paragraph 9.357.
[106] This can be demonstrated from the operation of the cost of new debt indexation mechanism. Year 1 would include a 20 year trail from 2000-2020 for embedded debt and 0.5 weight on 2020/21 iBoxx data. Year 5 would include a 20 year trail and 4.5 years of new debt iBoxx data.

trailing average of the iBoxx A/BBB used to inform the sector benchmark for the CMA's 2015 Bristol Water redetermination.[107]

Figure 4.2: CMA trailing average compared to recent regulatory equivalents



4.18 The CMA's decision to use a 20 year trailing average appears to hinge on KPMG analysis which suggests that 20% of outstanding sector debt was issued prior to 2005.[108] However, relying on this evidence to determine the appropriate trailing average for the notional company overestimates the true weight that should be applied to historical debt for two main reasons:

- The analysis is based on listed bond data, which does not include other instruments such as bank debt (which we estimate to account for approximately 18% of borrowing).[109] These instruments tend to have

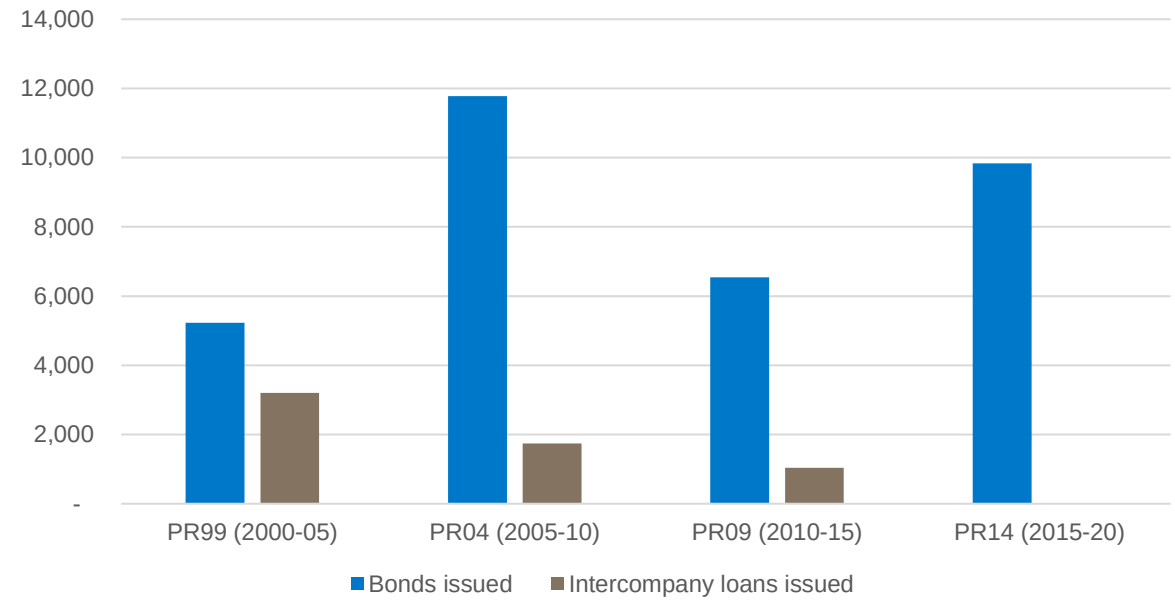
[107] CMA, 'Bristol Water plc - A reference under section 12(3)(a) of the Water Industry Act 1991 – Report', 06 October 2015, p. 305, paragraph 10.55
[108] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 594, paragraph 9.355.
[109] Based on our analysis of March 2018 business plan granular debt submissions.

shorter tenors and so are less likely to originate from the more historical 2000-05 period.

- The period 2000-05 was characterised by material long-tenor debt issuance for non-operational reasons (including Anglian Water), resulting in step changes in gearing, which financed returns to ultimate shareholders (either through special dividends or intercompany loans).

4.19 Figure 4.3 sets out our comparison of bonds issued and intercompany lending for the period 2000-05. We infer from our analysis that 61% of the outstanding bonds issued in 2000-05 are attributable to intercompany lending. Stripping out the equivalent amount of bonds financing this lending would result in adjusted total bond issuance over 2000-05 of around £2.0 billion. As a percentage of the adjusted 2000-20 period, this is 7.4%. As the CMA's proposed 20 year trailing average would place 25% weight on debt from this period, this is clearly overweights the contribution of debt from this period to the CMA's cost of embedded debt allowance.

Figure 4.3: Outstanding bonds and intercompany loans as at March 2020 (£m, 2000-20)



Source: Ofwat analysis of KPMG/Refinitiv data and regulatory accounts

4.20 We do not regulate shareholder distributions, however we have always been clear that the risks of these activities should be borne by shareholders, not customers. It would be perverse – and contrary to the interests of customers - if such non-operational borrowing were to lead to customers paying higher costs, and would suggest that customers were being exposed to the risks of these

financing activities, contrary to the purpose of adopting a notional approach to setting the allowed return.

4.21 The CMA adopting its proposed 20 year trailing average for embedded debt in its final determination will foreseeably increase the expectation from companies of a 20 year trailing average at PR24 and subsequent controls. While this approach is to the advantage of companies with a high weight on historic debt, it risks disadvantaging companies with shorter refinancing cycles if interest rates rise quickly. For instance, the move from a 10 year to a 20 year trailing average implies that the weight of the last 5 years in informing the index halves from 50% to 25%, which may cause embedded debt costs to increase more quickly than the regulatory allowance.

4.22 We therefore consider that the CMA should adopt a more evolutionary change from PR14 which strikes a more appropriate balance between the interests of companies with longer and shorter refinancing cycles. This will promote a more robust and stable framework for setting embedded debt that will give investors confidence to choose optimal debt financing strategies without the concern that this will be disrupted by large-scale recalibrations in future.

4.23 For all of the above reasons we strongly advocate that the CMA should retain our 15 year trailing average in its final determinations. This results in an allowance which is more aligned with company-reported data (though as we argue in the next section some adjustment to the index is still warranted), avoids customers from bearing additional costs from non-operational financing decisions, and represents a more evolutionary transition from the PR14 approach.

4.24 If the CMA is minded to retain its 20 year trailing average, we submit that it should revisit the weights used in its calculation. The CMA's provisional findings assume that each year of the trailing average should be weighted equally. This would be correct for a sector with 20 year debt and no RCV growth, such that debt issuance is driven by refinancing of an equal proportion of maturing debt from 20 years ago. It is not a realistic model for a sector which has experienced (and continues to experience) significant RCV growth and thus demand for new debt.

4.25 Retaining the CMA's assumption of debt issued at 20 year tenors and a 20 year trailing average, we would propose alternative weights for this average based on the historic profile of RCV in the water sector. Our analysis assumes that the notional company has issued debt consistent with the notional gearing level from previous price reviews, and that debt issued is refinanced when it falls

due. The results of applying these weights to the A and BBB iBoxx 10+ indices are set out in table 4.2.

Table 4.2: Alternative iBoxx weights implied by notional debt issuance over 1990-2020

	New RCV debt (£bn)	Refinancing debt (£bn)	Total debt	Weights	iBoxx A	iBoxx BBB	iBoxx A/BBB
2000-01	0.6	0.0	0.6	1.4%	6.74%	6.95%	6.84%
2001-02	0.5	0.0	0.5	1.1%	6.43%	6.75%	6.59%
2002-03	1.1	0.0	1.1	2.5%	5.99%	6.60%	6.30%
2003-04	1.0	0.0	1.0	2.3%	5.67%	6.06%	5.87%
2004-05	1.0	0.0	1.0	2.3%	5.65%	6.11%	5.88%
2005-06	3.7	0.0	3.7	8.3%	5.13%	5.51%	5.32%
2006-07	2.0	0.0	2.0	4.4%	5.40%	5.65%	5.53%
2007-08	1.6	0.0	1.6	3.7%	5.99%	6.38%	6.18%
2008-09	0.4	0.0	0.4	0.8%	6.63%	8.06%	7.34%
2009-10	1.4	0.0	1.4	3.2%	5.70%	6.60%	6.15%
2010-11	3.4	0.8	4.2	9.4%	5.31%	5.55%	5.43%
2011-12	2.2	0.8	3.0	6.8%	5.05%	5.27%	5.16%
2012-13	2.1	0.7	2.8	6.2%	4.32%	4.74%	4.53%
2013-14	1.5	0.9	2.4	5.5%	4.46%	4.81%	4.63%
2014-15	0.5	1.3	1.8	4.0%	4.01%	4.21%	4.11%
2015-16	3.8	1.2	5.0	11.2%	3.89%	4.26%	4.07%
2016-17	2.1	1.2	3.3	7.4%	2.97%	3.27%	3.12%
2017-18	2.2	1.3	3.5	7.9%	2.94%	3.16%	3.05%
2018-19	1.7	1.1	2.8	6.2%	3.19%	3.46%	3.32%
2019-20	1.4	1.1	2.5	5.5%	2.45%	2.77%	2.61%
			Weighted average:		**4.43%**	**4.77%**	**4.60%**

Source: Ofwat analysis of historical RCV and IHS Markit data

4.26 We consider that this approach is aligned with the CMA's benchmark-led approach. It also has the advantage of ensuring that customers are insulated from paying for non-operational financing decisions.

The CMA's decision to not adjust its iBoxx-based trailing average is not supported by a balanced reading of the evidence.

4.27 The CMA's provisional findings do not include the 25 basis point downwards adjustment which we applied to the level of the historic iBoxx in deriving our allowance. In justifying its decision the CMA cites analysis from the disputing companies, providing its view that this analysis 'strongly suggests that once tenor and credit rating is controlled for, there is no evidence of water company outperformance'.[110]

4.28 Companies and their advisers have made several claims referred to by the CMA to support its provisional decision:

- Anglian Water stated that our final determinations 25bps adjustment was based on an average tenor that was significantly shorter than the average weighted tenor of the relevant iBoxx index.
- Anglian Water also stated that our final determinations 25bps adjustment was based on the higher average credit rating than BBB+/Baa1 and was therefore inconsistent with the credit rating being targeted at PR19.
- KPMG for Anglian Water and Northumbrian Water supplied analysis that found for its sample of bonds that there was no outperformance on yields at the issuance date for bonds with tenor within five years of the weighted average tenor of the 'relevant'[111] index.

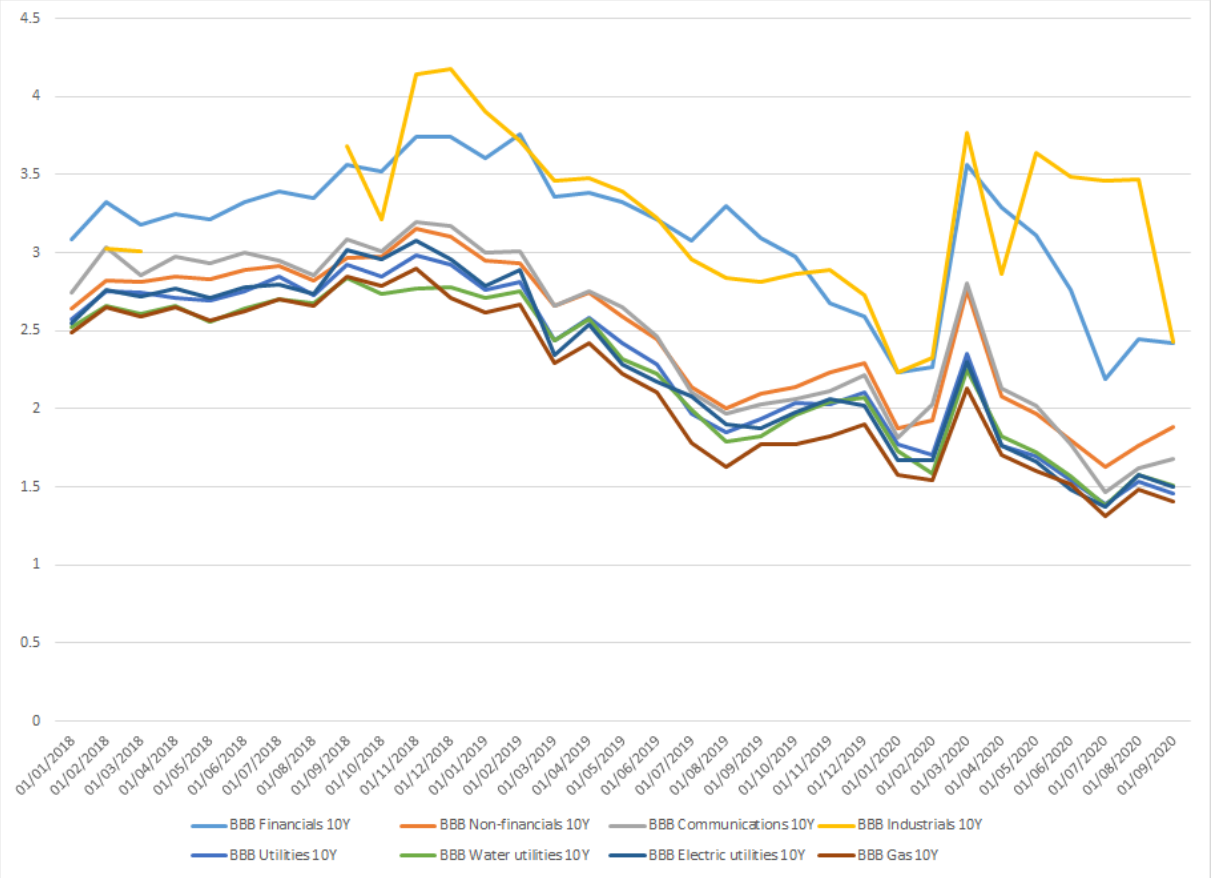
4.29 If it were true that credit rating and tenor are the only factors determining yield - and if KPMG were correct that there is no outperformance of water bonds with respect to the iBoXX A and BBB indices once credit rating and tenor is controlled for - we would understand the logic of the CMA's position. Because the CMA has constrained the tenor of notional debt issuance (20years) to close to the iBoxx A/BBB historical average of 19.4 years, because its targeted credit rating of Baa1 is close to the iBoxx A/BBB credit rating of Baa1, these statements being true would signal little prospect of notional company outperformance.

4.30 However, as noted by Europe Economics, there should be nothing especially controversial about the idea that bond yields for a specific sector might be different even controlling for these two factors. This is because the yield

[110] Competition and Markets Authority, 'Provisional findings report', September 2020, p.593, paragraph 9.352.
[111] That is, comparing A+, A, and A- rated debt to the 'A' index and BBB+, BBB, and BBB- rated debt to the 'BBB' index.

includes not only credit risk but also the likely correlation of that credit risk with the wider asset returns cycle (ie the debt beta).[112] That this difference in systematic risk is in practice a material consideration is set out in figure 4.4, which compares similarly-rated 10 year yields from different sectors. The very wide variance between sectors belies the notion that yields for a particular sector must lie close to the aggregated cross-sector average for bonds of similar tenor and credit rating.

Figure 4.4: Yields of 10 year bonds from different sectors



Source: Europe Economics analysis of Refinitiv Eikon data.
Note: The indices are Thomson Reuters indices, not iBoxx indices.

4.31 We dispute the KPMG finding of no outperformance once tenor and credit rating is controlled for. Our analysis uses a filtered sample of the base sample of water bond data used in the KPMG analysis using criteria to promote comparability to the iBoXX A/BBB 10+ indices (e.g. excluding debt <10yrs tenor at issuance). This results in a filtered sample of 68 bonds. For this sample, we find a similar weighted average tenor at issuance (21.9 years) comparing to the iBoxx A/BBB average (19.4 years). We also find a similar weighted average spread (39 bps) to the level of the iBoxx A/BBB as in our analysis for final determinations (which found a 41 basis point spread). The slightly higher

[112] Europe Economics, 'Responses to the CMA's provisional findings', October 2020, pp.13-14.

average tenor in our sample compared to the iBoXX A/BBB would seem to suggest that tenor differences are if anything contributing negatively to the size of the average spread.

4.32 We find from analysis of our sample of bonds that weighted average spread to the 'relevant' iBoxx of comparable credit rating[113] is negative even where tenor is higher than the relevant iBoxx (Table 4.3). The implication of this is that there is no consistent relationship between longer tenor and level of discount to relevant iBoxx and that outperformance is on average present even where tenor exceeds the iBoxx A/BBB tenor. This in turn suggests that KPMG's findings (which find a relationship between tenor and yield) are the result of its sample selection criteria, rather than a result which holds for water bonds in general.

Table 4.3: Spread to relevant iBoxx index by tenor difference bucket[114]

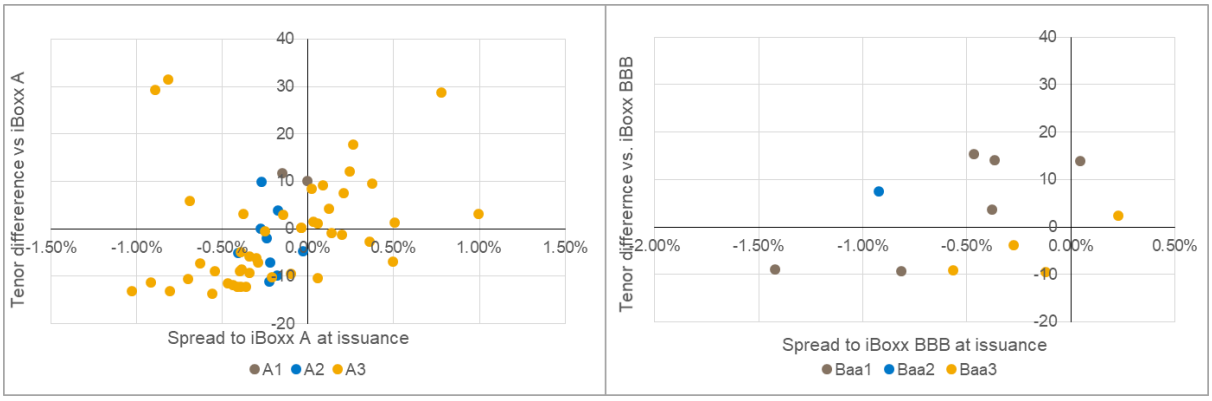
	-15 to -5 years	-5 to +5 years	+5 to +15 years	+15 to +50 years	Overall
Weighted average spread	-0.41%	-0.06%	-0.11%	-0.15%	-0.22%

Source: Ofwat analysis of IHS Markit, Capital IQ data

4.33 Graphical inspection of the tenor and yield differences of bonds in our sample (Figure 4.5) also suggests that there is no clear correlation between tenor and spread to relevant iBoxx. Yields at a discount to the relevant iBoxx are in evidence for tenors above the comparable iBoxx tenor – especially for bonds with higher credit ratings in the three-notch band.

[113] Following the KPMG approach compares A+/A/A- bonds with the A index and BBB+/BBB/BBB- bonds to the BBB index.
[114] Bonds are assigned to 'buckets' according to the difference between tenor-at-issuance and the corresponding years-to-maturity of the iBoxx 10yr+ index with the similar credit rating. For instance a bond rated A3 would be compared to the A iBoxx. If it had longer tenor by 7 years than this index, it would be assigned to the '+5 to +15' bucket.

Figure 4.5: Credit rating and spread-at-issuance



Source: Ofwat analysis of IHS Markit and Refinitiv data

Even if it were true that water bonds do not outperform the relevant iBoxx index after controlling for tenor and credit rating, we consider there would still be a case for a downward adjustment to the level of the iBoxx A/BBB if it were used to set an allowance. We agree that the distribution of credit ratings in our sample (Table 4.4) likely drives some of the discount to iBoXX A/BBB we estimate. This is because the weighted average credit rating of the iBoxx is Baa1, whereas the average for our sample is A3.

Table 4.4: Rating at issue breakdown of Ofwat updated sample

Moodys Rating	Count	%
A1	2	2.9%
A2	9	13.2%
A3	46	67.6%
Baa1	6	8.8%
Baa2	1	1.5%
Baa3	4	5.9%
Total	68	100%

We consider that the relatively higher credit rating of bonds in our sample is a relevant feature of the notional company. Metrics used in past price reviews covering the period 2000-2015 imply the notional company was funded to have credit metrics consistent with a higher rating than the CMA's Baa1 target. Table 4.5 sets out that notional credit metrics are consistent with at least an A3 rating based on Moody's guidance. It would therefore seem appropriate to consider this higher historical notional credit rating when assessing the potential for the notional company to issue debt more cheaply than the iBoxx A/BBB average over 2000-15 – either by making an adjustment to the level of the A/BBB index or by using the 'A' rated index for the relevant years.

Table 4.5: Notional company (water and sewerage companies) credit metrics and Moodys (pre-2018)[115] guidance for an A3 rating

	PR99 (2000-05)	PR04 (2005-10)	PR09 (2010-15)	Moody's guidance
Interest Cover Ratio	>3x	Around 3x	Around 3x	n/a
Adjusted Interest Cover Ratio	n/a	Around 1.6x	Around 1.6x	≥1.6x
Gearing	Min 40%	Below 65%	Below 65%	<65%

Source: Ofwat analysis of Moodys guidance and previous final determinations

There are two additional important technical errors in the calculation of the CMA's index-led approach that should be corrected

4.34 The CMA's technical approach to setting the allowed return on embedded debt contains two technical errors that are material to the calculation of the cost of embedded debt:

- **Data cut-off:** The CMA uses a cut-off of end July 2020, whereas we used 31 March for final determinations.
- **Dynamic embedded debt:** The CMA adjusts for the impact of falling embedded debt costs over the 2020-25 control period; our final determinations allowance did not do so.

4.35 By incorporating iBoxx yield data from after the start of the control period (1 Apr to 31 June 2020) in its embedded debt cost allowance, the CMA seems to implicitly determine that debt issued in this period is both embedded and new debt. We consider these categories mutually exclusive and that it would be more appropriate for the CMA's final determinations to use 31/03/2020 as its data cut-off. This would avoid logically unintuitive outcomes such as the ratio of new to embedded debt in 2020-21 summing to more than 100%. It would also avoid the practical difficulty of having to carry out a bespoke redesign of the cost of new debt reconciliation model (which has been the subject of extensive consultation).[116]

4.36 The CMA selects a point estimate as the bottom of its stated embedded debt range due to its view that 'average embedded costs of debt for the notionally-

[115] Moodys, 'Regulator's proposals undermine the stability and predictability of the regime', May 2018, p5, exhibit 5.
[116] Elsewhere the CMA states it agrees with the use of the reconciliation mechanism for the cost of new debt, see for example, pp.598, para. 9.376(d).

capitalised company are likely to fall mechanically over the price control.'[117] This statement is used to support the use of the A-rated 20 year trailing average to inform the cost of embedded debt point estimate.

4.37 We agree with the logic that the notional cost of embedded debt will fall over the period 2020-25. Assuming all debt is issued at 20 year tenors, this would mean that debt issued in 2000 would fall due in 2020 and thereafter not be relevant to the notional company's embedded cost base. This suggests that the impact of mechanistically falling rates for embedded debt should be modelled as a collapsing trailing average over 2020-25, with an average across all 5 years used as the point estimate. This approach is different to the one applied in our determinations, but should logically be applied if the CMA retains its trailing average approach. Table 4.6 sets out a stylised example of how this might work using the iBoxx A/BBB indices.

Table 4.6: Illustrative collapsing trailing average for the notional company – assumes simple average of the iBoxx A/BBB

	2020-21	2021-22	2022-23	2023-24	2024-25	Average
Trailing average length	20 years	19 years	18 years	17 years	16 years	18 years
Index-based allowance	5.12%	5.02%	4.94%	4.86%	4.79%	4.95%

Source: Ofwat analysis of IHS Markit data

4.38 The point estimate figure of 4.95% derived using this approach is significantly different and higher than the CMA's point estimate of 4.81%. We strongly urge therefore, that the fall in the embedded debt over 2020-25 is explicitly modelled to be consistent with the CMA's other assumptions (e.g. tenor of debt) for final determinations and that in setting the cost of embedded debt the CMA takes adequate account of our other representations. Given the likely impact on weighted average years-to-maturity from adopting this approach it also has implications affecting the assumed share of new debt (using a notional approach). We consider that it would be appropriate for the CMA to revisit this component of its overall allowance in light of this.

[117] Competition and Markets Authority, 'Provisional findings report', September 2020, p.673, paragraph 9.674 (a).

New debt:

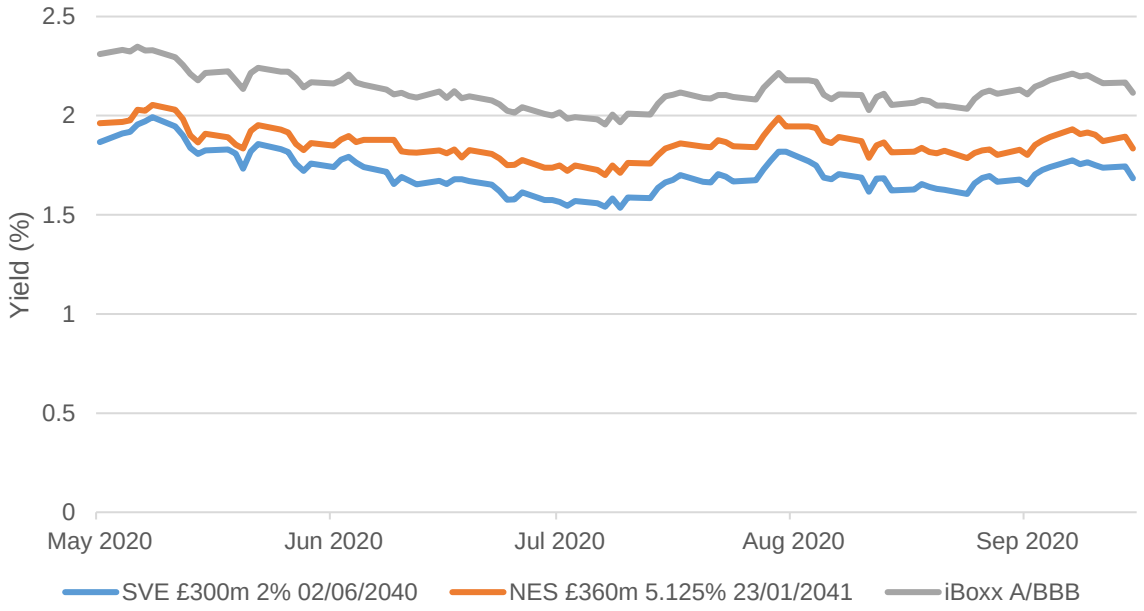
Evidence supports a downwards adjustment after tenor and credit rating is controlled for

4.39 As with its provisional decision on embedded debt, the CMA has not made an adjustment to the base level of the iBoxx A/BBB to reflect the assumed ability of the notional company to issue lower-yielding bonds. The CMA justified its decision by referring to previously discussed arguments made by Anglian Water that there was no evidence of a wedge after tenor and credit rating were controlled for. In addition, both Anglian Water and Yorkshire Water suggested that our PR19 final determination implied a lower credit rating for the notional company than Baa1/BBB+, and thus that the cost of new debt ought to be based on the iBoxx BBB index with no performance wedge deduction.

4.40 We have previously supplied the CMA with analysis of traded yields on disputing company fixed-rate bonds rated Baa1 or lower. [118] This analysis demonstrates that even bonds comparable to the approximately 20 years-to-maturity of the iBoxx A/BBB trade at a discount to our PR19 benchmark of the iBoxx A/BBB minus 15 basis points. In addition to this evidence, Figure 4.6 plots traded yields for two fixed-rate bonds close to 20 years to maturity and with Baa1 issuer rating. On average between 29 May and 13 October 2020, these bonds have traded at a 35bps discount to the iBoxx A/BBB. This demonstrates that an adjustment of at least the level used at our final determinations (15bps) remains appropriate

[118] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues on companies' statement of case', Figure 3.4, p. 86.

Figure 4.6: Traded yields for Baa1 issuer-rated bonds with ~20yrs to maturity



Source: Ofwat analysis of Refinitiv data

4.41 We have previously set out our disagreement with the premise that our final determination implies a notional company credit rating below BBB+/Baa1.[119] Our view remains that this assessment is based on a simplistic assessment of a single metric (AICR), and that companies close to our notional gearing as at March 2020 are rated at least Baa1. For instance, Dŵr Cymru (60.0% gearing) is rated A3, Severn Trent (64.9% gearing) is rated Baa1, United Utilities (67.7% gearing) is rated A3.

Share of new debt:

The CMA has made two errors in its stated range, as the low end of the CMA's stated range does not reflect RCV growth.

4.42 The CMA's provisional findings propose a range for the share of new debt ranging from 13% to 21%. The CMA's decision bases the upper end of the range on the notional approach from our final determinations. It bases the lower end on a calculation assuming that the new debt share at the end of the period can be estimated using the 19.4 year average years-to-maturity assumption for

[119] Ofwat, 'PR19 Final determinations: Risk and Return – response to common issues in companies' statements of case', pp.75-76, para. 3.87.

the iBoXX A/BBB index. The CMA assumes that (1/19.4) per cent of new debt is issued in each year of the control, or a cumulative 26% by the end of the period. This suggests that on average the share of new debt is 13% over the control period. Placing weight on this figure in the CMA's stated range is however erroneous for two reasons:

- The CMA's approach in calculating its lower-bound estimate implicitly assumes no contribution from RCV growth. This is an error. We do not understand why the CMA has chosen not to factor RCV growth into its calculation because this is not a realistic assumption for the circumstances of the sector over 2020-25. For our calculation in our final determinations, we estimated that incorporating new debt issuance due to RCV growth resulted in a 3.9% increase in the share of new debt which would have resulted from refinancing alone.
- It is an error to calculate the share of new and embedded debt by reference to the characteristics of the simple 20 year iBoxx benchmark, for similar reasons to those previously set out in the embedded debt section on our concerns regarding the length of the trailing average. The appropriate length of trailing average is likely to be much lower than 20 years, once factors such as non-operational issuance are stripped out. We would expect a shorter trailing average to result in a higher share of new debt through a larger share of refinanced debt falling due each year.

4.43 Correcting for both of these factors suggests the low end of the CMA's range ought to be higher, resulting in a proportion of new : embedded debt that is more consistent with the high end of the CMA's stated range.

5. Cost of equity

The CMA's provisional findings

5.1 The CMA has provisionally set a cost of equity of 7.18% in nominal terms; higher than our final determinations allowance of 6.27% by 91 basis points. The CMA has used the same CAPM-led framework which we used for our final determinations, but its approach to deriving ranges and point estimates for each component leads to a materially different view on the cost of equity. We summarise differences relative to our final determinations below in table 5.1:

Table 5.1 – Cost of equity differences between the CMA's provisional finding and PR19 final determinations (nominal)

Component	PR19 FD	CMA provisional	Key difference in the CMA approach
Total Market Return	8.63%	9.09%	- Predominant weight placed on 'ex-post' historical approaches - Data input ranges truncated to exclude low-end TMR estimates. - Some weight placed on historical RPI as well as CPI to deflate returns
Risk-free rate	0.58%	1.02%	- Weight placed on AAA-rated corporate bonds as well as RPI-linked gilts
Unlevered beta	0.29	0.31	- 5 year rolling averages of 2-10 year estimation windows used vs. more 'spot' 1-5 year windows used at PR19 FDs.
Debt beta	0.125	0.04	- Greater weight placed on possibility from direct econometric approach that debt beta is zero.
Notional equity beta	0.71	0.76	- CMA equity beta is 0.05 higher
Cost of equity	6.27%	7.18%	- CMA allowance is 91bps higher than Ofwat FD allowance

A summary of our response

5.2 The CMA has intentionally chosen cost of equity parameters between the midpoint and top of its stated ranges. The rationale for doing so is cited as being because these estimates are 'more likely to suffer from error'. [120] In

[120] Competition and Markets Authority, 'Provisional findings report', September 2020, pp.672-673, paragraph 9.674(c).

addition to this, the CMA sets out a series of additional concerns around financeability, asymmetric risk and long-term investability of the sector which it claims also support a degree of aiming up. We set out our reasoning for why aiming up is not necessary and is harmful to customer interests in section 3.

5.3 However, the CMA has erred upwards in its cost of equity even in the absence of aiming up. This is because the stated ranges for total market return, debt beta and the risk-free rate give a supposed midpoint that lies well into the upper end of the distribution of plausible values. There are many reasons for this including that the CMA has been internally inconsistent in its approach and has discounted data which would extend the lower end of the range without providing justification. This feature of the CMA's approach constitutes an implicit layer of aiming up even before the choice to pick the point estimate from the upper end of the stated range. The approach has been referenced by Europe Economics as 'double aiming up' and by Wright & Mason who state 'We think the CMA has anyway aimed up as it has gone along, setting ranges for the components of the cost of equity which already are high'.[121]

5.4 Overall we consider that our evidence from Market-to-Asset ratios and equity analyst publications from section 2 support that the cost of equity in our final determinations is sufficient and even generous. This evidence has been acknowledged by the CMA, and so our expectation is that increasing the allowed return to above this level should require the CMA to meet a high evidential bar if it is to to protect the interests of customers. We do not consider this evidential bar has been met by the CMA's analysis.

5.5 We ask the CMA to reconsider the stated ranges for its cost of equity parameters: correcting errors, providing justification where it omits data, and applying a consistent approach to outliers. In addition, we ask that the CMA's point estimate should have regard to top-down cross checks on the cost of equity provided by market-to-asset ratios.

5.6 The rest of this section is structured as follows:

- **Section 5.2**: Total Market Return
- **Section 5.3:** Risk-free Rate
- **Section 5.4:** Equity beta

[121] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, pp.26-27

Total Market Return

5.7 We recognise the important and difficult job the CMA is doing to examine afresh the evidence on Total Market Return. The CMA's decision to move up from a 5.0-6.0% RPI range for its August redetermination of NERL's price control to a range of 5.25% to 6.25% is not, however, justified by the available evidence.

5.8 We recognise that 0.1 percentage points of this change are due to the smaller RPI-CPI wedge of 0.9% used in its provisional findings compared to the 1.0% used for NERL RP3. However, we note that the CMA has other than this relied on essentially the same data sources as the NERL redetermination, suggesting that the increase is due to changes in assumptions and the weight placed on particular sources of evidence.

5.9 We list below examples of the CMA's assumptions and weightings which are **inconsistent with its decisions elsewhere** or where **insufficient evidence has been provided** to understand how it has reached its provisional decision. These issues collectively result in an additional layer of aiming up, even before the selection of a point estimate at the 75th percentile of the stated range. We submit that if these issues were corrected for, that it would weaken the case for moving away from the 5-6% range used by the CMA for its redetermination of NERL RP3.

- **Formula effect adjustment:** For its redetermination of NERL's price control, the CMA recognised that increases in the RPI formula effect over time led to overcompensation for investors in RPI-indexed assets and that this should be reflected via a 30-40bps downward adjustment to the real return calculated using historical RPI.[122] In its provisional findings for the disputing water companies, the CMA likewise clearly states: 'the TMR range derived from the CED/RPI inflation series is likely to over-estimate the real TMR on a forward-looking basis due to the increases in the formula effect over time',[123] yet in response it has only discounted the upper end of its overall RPI-based ex-post and ex-ante range. This is logically inconsistent: as all real returns derived using historical RPI are affected by this issue, the entirety of the range should be shifted downwards.

[122] CMA, 'NATS (En Route) Plc / CAA Regulatory Appeal: Final report', August 2020, pp.226-227, Paras. 13.209 and 13.215
[123] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 557, paragraph 9.218.

Wright et al. (2018) take the view that regulators should simply rely solely on returns deflated by historical CPI: 'Changes to the underlying methodology mean that the RPI is not comparable over time, whereas historical CPI estimates try to match current methodology. Historic equity returns deflated by RPI will therefore have limited informational content about future equity returns deflated by RPI.'[124] The authors reaffirm their view in their 2020 publication, stating that it is aligned with the considered views of a wide range of experts on the subject.[125] If the CMA is minded to place weight on RPI-deflated returns for its final determinations, we consider that a 30-40 basis point adjustment is the bare minimum which is appropriate – reflecting the average change in the pre-2010 and post-2010 formula effect, but not any contribution to the formula effect from changes to the RPI methodology prior to 2010.

- **PwC/MMW ex-post estimate:** The CMA places some weight on the PwC adaptation of the 'Mason Miles & Wright' approach of adjusting the whole-period geometric average return for different holding periods and serial correlation.[126] The range of uplift proposed by the PwC analysis is 0.3% to 1.2%, however the CMA only uses the upper bound figure in its analysis - without providing further justification. This decision introduces an upward skew to the range of TMR estimates produced by this analysis, and is an example of implicit additional 'aiming up'.
- **Holding periods:** The CMA uses holding periods of 10 as well as 20 years to inform its TMR ex-post ranges. This is inconsistent with its approach for other parameters (e.g. risk-free rate, embedded debt) where the CMA sets out its view that it is targeting an investment horizon of 20 years, and places no weight on evidence from 10 year investment horizons.[127] Consistently applying this rule to the CMA's ex-post analysis would result in a lower upper-bound of the resulting ranges.
- **Ex-ante volatility bias uplift:** The CMA uses an estimate of the volatility bias uplift of 130bps, which appears to be an error. This estimate is taken from a paper by Gregory (2011)[128] which in turn cites Dimson et al. (2002)[129] as the source of the 130bps assumption. This suggests the

[124] Wright et al. 'Estimating the cost of capital for implementation of price controls by UK regulators', March 2018. Appendix D, p. D-109.
[125] Wright & Mason, 'Comments for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020.
[126] Competition and Markets Authority, 'Provisional findings report', September 2020, p.556 paragraph 9.217.
[127] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 594, paragraph 9.358.
[128] A. Gregory, 'Expected cost of equity and the expected risk premium in the UK', 2011, p. 5.
[129] Dimson et al. 'Triumph of the Optimists: 101 Years of Global Investment Returns', 2002, Princeton New Jersey: Princeton University Press.

estimate is based on outdated (and potentially non-UK) data. We submit that the CMA should instead use its 2018 Barclays Equity Gilt Study dataset if it is minded to use a volatility adjustment. Fama & French (2002)[130] recommend adjusting estimates from their dividend growth model for the difference in variance of share price growth and dividend growth in order to correct for volatility bias. We calculate that half the difference in variance between the real equity price index and real equity income index in the BEGS dataset implies an adjustment of 63bps. This is more aligned with the 75bps used in the Competition Commission's 2014 redetermination of Northern Ireland Electricity's price control, as we would expect, given the addition of only a few years' extra data.[131]

- **Ex-ante use of holding periods:** The volatility bias adjustment converts a geometric return estimate to a fully arithmetic one. As recognised in the CMA's redetermination of the NERL RP3 price control, some adjustment to the arithmetic ex-ante return (post-bias adjustment) to place weight on geometric returns is warranted.[132] Similarly to the horizon-weighted estimators used in the CMA's ex-post range, this is to reflect long holding periods and serial correlation. Yet whereas for the NERL RP3 redetermination, this principle was reflected in using an ex-ante range of 4.1% to 6.5% (with more weight placed on the upper end), for the current provisional findings the CMA instead chooses to denote the range exclusively with the post-uplift (arithmetic) values – thereby excluding the previous lower bound of 4.1%. This excluding of a lower-bound outlier skews the range upwards and so effectively contributes to another layer of aiming up.
- **International cross-checks:** Wright et al (2003) state in advice to economic regulators: 'Both on a priori grounds, and on the basis of evidence, our strong view is that estimates of both the equity return and the risk-free rate should be formed on the basis of international evidence, not just from the UK experience.'[133] The CMA's provisional decision on TMR does not make use of international evidence as a cross check. It is notable however that its point estimate of 6.95% (CPIH) lies materially above comparable ex-post estimates from Dimson et al. (2019) which cite an arithmetic average of 6.0% and 6.5% for the World and Europe respectively. It is also higher than

[130] Fama & French, The Equity Premium, The Journal of Finance, 2002.
[131] Competition Commission, Northern Ireland Electricity Limited price determination - A reference under Article 15 of the Electricity (Northern Ireland) Order 1992 – Final determination, 26 March 2014, p. A13(3)-5, paragraph 8
[132] Competition and Market Authority, 'NATS (En Route) Plc / CAA Regulatory Appeal – Final Report', July 2020, p. 232, Para. 13.240
[133] Wright et al. 'A study into certain aspects of the cost of capital for regulated utilities in the UK', p. 4.

the implied ex-ante estimate of a globally diversified equity index proposed in the same publication of 5.9% in CPI terms.[134]

- **Forward-looking evidence:** The CMA states that 'forward looking evidence can provide a useful cross-check in some cases', but there is no evidence forward-looking evidence has influenced the CMA's choice of overall TMR range. The CMA's' review of the evidence suggests these figures lie in the 5-6% RPI range, or even below.

5.10 We set out in table 5.2 below our view of what the CMA's component-level TMR ranges would look like if it addressed the above issues with reasonable adjustments. We note that the majority of figures lie in the range 5.0% - 6.0%, and only for one range (ex-post RPI-CED) is there an upper-bound figure above 6.0%. Given uncertainty that the RPI formula effect bias is truly as low as 30bps, we suggest that this data point should not carry undue weight.

Table 5.2 – Comparison of CMA provisional and Ofwat (post suggested amendments) TMR ranges (assumes RPI of 2.9%)

Component	CMA (provisional)		Ofwat (alternative)		Differences in Ofwat alternative to CMA approach
	Low	High	Low	High	
Ex-post: CPI-CED	5.2%	5.9%	5.2%	5.8%	- 20 year holding periods (no 10 year data)
Ex-post RPI-CED	5.9%	6.6%	5.6%	6.2%	- 20 year holding periods (no 10 year data) - 30bps formula effect bias adjustment
Ex-post: PwC/MMW	5.5%	6.2%	5.1%	5.5%	- 30bps formula effect bias adjustment - midpoint of PwC 0.3% to 1.2% uplift range (0.75%) used.
Ex-ante: BEGS DGM & DMS DGM	5.6%	6.65%	5.0%	5.9%	- BEGS DGM estimate adjusted for 30bps formula effect bias - BEGS DGM uplifted using 63bps volatility uplift implied by BEGS - Some movement towards geometric mean to account for 20 year holding periods.[135]
Forward-looking:	5.0%	6.0%	5.0%	6.0%	- No change
Overall CMA TMR range	5.25%	6.25%	-	-	-

[134] Dimson et al. 'Credit Suisse Global Investment Returns Yearbook 2019', p.37. The authors cite a risk premium above bills of 5% where the long-run World arithmetic average yield for bills is 0.9%.
[135] We adjust the (fully arithmetic) post volatility adjustment figure in proportion to the difference between the whole period 1-year arithmetic average and each end of the RPI-CED ex-post range.

Risk-free rate

5.11 The CMA's provisional decision on the risk-free rate uses a range of -1.40% to -0.81% in CPIH terms. The ends of this range are derived by taking a 6 month trailing average of yields on 20 year index-linked gilts and an index of AAA-rated corporate bonds of broadly similar tenor.

5.12 The CMA's justification for this change rests on its understanding that the Modigliani-Miller theorem and the practical application of the CAPM have two key requirements of the risk-free rate:[136]

- that all market participants can borrow and lend at the same price and do so to optimise their investment options; and
- That all debt is risk-free

5.13 In other words, the CMA is arguing that all market participants should be able to borrow and lend at the risk-free rate.

5.14 The CMA considers the use of index-linked gilts as a proxy for the risk-free rate does not satisfy this requirement, because only the government is able to issue new debt at the gilts rate.[137] The CMA suggests that using this rate may therefore understate the CAPM-derived cost of equity if it underestimates the return associated with a 'zero-beta' asset. It goes on to argue via reference to analysis in a textbook by Berk and DeMarzo[138] that the appropriate proxy for the risk-free rate is between the government borrowing rate and the rate at which relevant market participants can borrow at.[139] The CMA argues that AAA-rated corporate bonds therefore offer a suitable data point to proxy for the risk-free rate, as they are very close to risk-free and closer to representing a borrowing rate available to all relevant market participants.[140]

5.15 Conceptually we understand the CMA's concern with the lack of a link between the use of gilts and the intuitive explication of the CAPM. However, we consider

[136] Competition and Markets Authority, 'Provisional findings report', September 2020, p.520, paragraph 9.75
[137] Competition and Markets Authority, 'Provisional findings report', September 2020, p.520, paragraph 9.75
[138] Berk and DeMarzo (2014), Optimal Portfolio Choice and the Capital Asset Pricing Model, Chapter 11 Appendix, p398-399
[139] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 520-521, paragraph 9.77.
[140] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 524, paragraph 9.93.

that the CMA's approach to addressing that concern introduces a risk of overstating required returns.

5.16 Placing weight on AAA-rated bonds to infer a risk-free rate is, as far as we are aware, novel and without precedent in the UK regulated sectors. Based on evidence from reports we have commissioned from Europe Economics and Wright & Mason, we are concerned that the CMA should not place weight on AAA-rated bonds in assessing the risk-free rate for two primary reasons:

- by design the regulatory determination requires that we set an allowed equity return that is reasonable for an equity investor in the sector and as such the marginal investor is a lender, not a borrower;
- the practical application of the CAPM does not require that all participants must be able to issue debt at the chosen risk-free rate; and
- from an analysis of AAA-rated bonds, there are significant distortions in a dataset of AAA-bonds and these are primarily from the financial sector, which may well outweigh distortions from imperfections in gilts as a risk-free rate proxy.

5.17 The CMA raised the question of placing reliance on AAA-rated bonds at the cost of capital round table. The CMA's provisional findings have not, however, engaged with the evidence submitted by our advisers, Europe Economics, in reaching its decision to place weight on AAA-bonds to derive the upper end of its risk-free rate range. Alongside this response Europe Economics provide additional evidence on points already submitted to the CMA as part of our submission on 20 August.[141] [142] We expect the CMA to fully engage with the evidence provided in reaching its final determination.

5.18 In addition, we commissioned Wright & Mason to further consider the CMA's arguments and the consequences of placing weight on AAA-rated corporate bond yields as a risk-free rate proxy

5.19 Wright & Mason[143] apply the model first developed by Brennan (1971)[144] to deal carefully with the case that the CMA raises, illustrated in Figure 6.1 (taken from Berk & DeMarzo), where potentially there are different saving and borrowing rates. In the standard CAPM, with borrowing and lending at the same rate, all investors face the same capital allocation line. When borrowing and

[141] Ofwat, 'Further note to CMA on hearing cost of capital issues', August 2020.
[142] Europe Economics, 'Issues Arising From CMA Expert Panels', August 2020.
[143] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020 pp.4-10
[144] Brennan, M. (1971). "Capital Market Equilibrium with Divergent Borrowing and Lending Rates". *Journal of Financial and Quantitative Analysis* 6, 1197–1205.

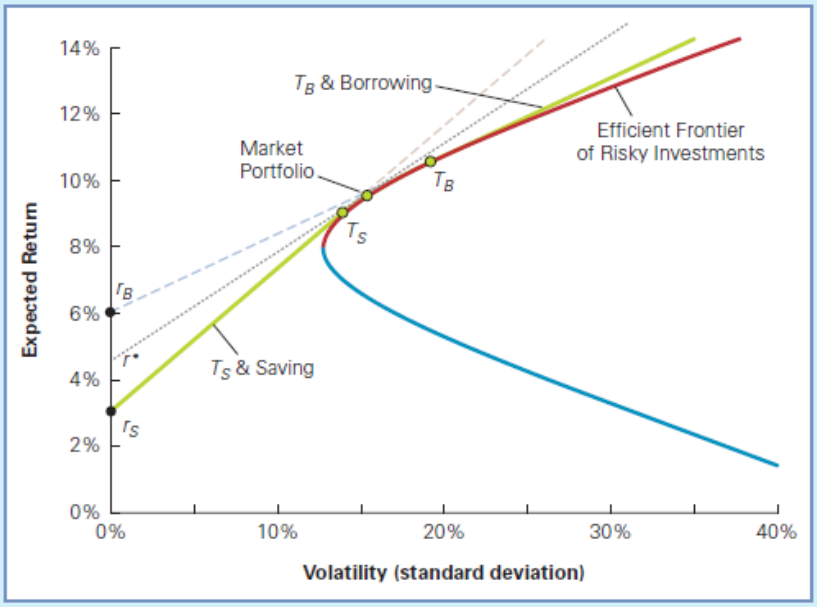
lending rates are different, different investors face different capital allocation lines: a distinction needs to be made between net lenders and net borrowers. Investors who are net lenders are able to allocate assets according to the Capital Allocation Line denoted by the green line to the left of T_S in the figure. Investors who are net borrowers have a Capital Allocation Line denoted by the green line to the right of T_B

Figure 5.1: The CAPM with different saving and borrowing rates, from Berk & DeMarzo (2014)[145]

FIGURE 11A.1

The CAPM with Different Saving and Borrowing Rates

Investors who save at rate r_S will invest in portfolio T_S, and investors who borrow at rate r_B will invest in portfolio T_B. Some investors may neither save nor borrow and invest in a portfolio on the efficient frontier between T_S and T_B. Because all investors choose portfolios on the efficient frontier from T_S to T_B, the market portfolio is on the efficient frontier between them. The dotted tangent line through the market portfolio determines the interest rate r^* that can be used in the SML.



5.20 For CAPM purposes, the key investor is the marginal one i.e., the investor who most actively trades in an asset and hence is most influential in determining its price. In the standard CAPM, the distinction between the marginal and average investor is not important since all investors face the same capital allocation line. It is crucial when borrowing and lending rates are different, since different investors face different capital allocation lines, as explained above. Wright & Mason infer from the ownership structure of the disputing companies that the marginal investor in the water sector is institutional (i.e. acting on behalf of savers), and is thus a net lender. Hence the relevant riskless (zero-beta) asset for the marginal investor is where its capital allocation line, to the left of T_S, hits the vertical axis. Since these investors can buy index-linked gilts, their riskless asset is the index-linked gilts rate.

5.21 In contrast, Wright & Mason state that the CMA looks to use the riskless asset for the average investor, rather than the marginal investor. They show that the

[145] Berk & DeMarzo, 'Corporate Finance, Third Edition' 3rd Ed, 2014, p. 399

correct way to determine this asset (and its return) is to use the proportions of net lenders and net borrowers who invest in the UK water sector. Instead, the CMA uses weights derived from its approach to "aiming up", and hence assume that 75% of investors are borrowers, 25% lenders. Wright & Mason claim is likely to over-estimate the average considerably, given that most investors in the water sector are institutional i.e., net lenders. Wright & Mason reaffirm that their preferred proxy for the risk-free rate remains the index-linked gilts rate, consistent with the recommendation of the 2018 UKRN Cost of Capital study.[146]

5.22 Europe Economics argue that practical application of the CAPM does not require that all participants must be able to issue debt at the chosen risk-free rate. Instead, they find that it is sufficient that they can take short positions in the instrument proxying for the risk-free rate. Europe Economics cite Black (1972), who states: 'An investor may take a long or short position of any size in any asset, including the riskless asset. Any investor may borrow or lend any amount he wants at the riskless rate of interest'.[147] Europe Economics also cite a description by Blume et al. (1973) of how shorting such assets can restore equilibrium under the CAPM:

'If, for example, the return on stocks implies a much higher zero-beta return than the return on high-grade corporate bonds, so that the market for corporate securities is out of equilibrium, then there is no action on the demand side which would correct for this disequilibrium if sufficient short-sales of bonds (associated with purchases of stocks) are not possible. With unlimited short-sales the disequilibrium should disappear since investors could obtain a higher return for given beta by selling bonds short and using the proceeds to lever lower beta stocks to the level of beta they desire. Without short-sales, the disequilibrium could still be corrected by corporations issuing more bonds and in the process raising bond yields since this would tend to lower their cost of capital. However, for U.S. Government securities, including Treasury bills, there would be no similar adjustment process, though short-sales should be easier to effectuate than in corporate bonds'.[148]

5.23 These citations challenge the CMA's proposition that the CAPM requires participants to be able to issue debt at the risk-free rate: they suggest that shorting the risk-free instrument can achieve the same objective of restoring

[146] Wright et al. 'Estimating the cost of capital for implementation of price controls by UK regulators', March 2018.
[147] F. Black, 'Capital Market Equilibrium with Restricted Borrowing', he Journal of Business, Vol. 45, No. 3 (Jul., 1972), pp. 444-455
[148] Blume, M. E., & Friend, I. (1973), "A new look at the capital asset pricing model", The Journal of Finance, 28(1), pp19-33

equilibrium. Europe Economics suggest a range of options for doing so, including shorting a bond exchange-traded fund (ETF), purchasing ETF put options or government bond put options, or trading in bond futures.

5.24 Europe Economics note that the use of the CMA's preferred iBoxx indices (the iBoxx £ Non-Gilts AAA 10+ and 10-15 indices) brings its own set of distortions.[149] In particular, EE notes that:

- 87% of bonds in the CMA's sample are financial, and thus subject to financial sector debt beta risk which could in principle be high.
- the CMA's finding of low default risk for AAA-rated bonds in general while these bonds remain AAA-rated may be misleading as in recent history many financial sector bonds rated AAA have subsequently been downgraded very markedly (in some case to junk status).
- the constituent bonds of the indices suggest they are subject to illiquidity risk premia, for instance showing bid-ask spreads that are tens or even hundreds of basis points higher than the comparable gilt benchmark.

5.25 Overall, EE make the point that it is far from assured that the distortions introduced by these risk premia outweigh distortions from imperfections in gilts as a risk-free rate proxy. The consultancy's conclusion is that government bonds are a superior proxy (even if they are imperfect) and as such should carry materially greater weight in any average containing both gilt yields and corporate AAA-rated yields.

5.26 In summary, we ask that the CMA respond fully to the arguments and analysis in the Wright & Mason and Europe Economics reports. If it is minded to retain its approach of weighting AAA-rated corporate bonds more highly than index-linked gilts, we think it is incumbent that the CMA provide a reasoned explanation setting out how this decision is consistent with corporate finance theory, applied to the particular circumstances of the water sector.

Equity beta

5.27 The CMA's provisional decision on equity beta is largely informed by its parameter choices on unlevered beta and debt beta. Our primary concern with the approach to the CMA's assessment of range estimates of beta relates to the **inconsistent approach** to the exclusion of outlying data points to its assessment of unlevered and debt betas. We request that the CMA adopts a

[149] Europe Economics, 'Responses to the CMA's provisional findings', October 2020, pp.11-12.

consistent approach to the treatment of outlying data points across its estimates of debt and equity betas in its final determinations.

Unlevered beta:

5.28 For unlevered beta, the CMA has provisionally adopted a range of 0.27 to 0.32. This is based on averaging betas of 2 year, 5 year and 10 year estimation periods over the timeframe of 1-5 years, and using daily, monthly and weekly data. In spite of the key differences relative to the approach adopted for our final determinations, the CMA's range is similar to the plausible range we cited for final determinations. The midpoint of the CMA's range is 0.295 compared to our final determinations point estimate of 0.29, however our point estimate for unlevered beta was taken in the round and should not be interpreted as supporting this figure in all circumstances.

5.29 We note Mason & Wright's conclusion that the CMA's provisional decision on beta is over-generous, based on inspection of the long-run 2 year beta data betas going back to 1998.[150] The authors identify that the average value of raw equity betas in their sample is slightly below the CMA's 0.59-0.70 range, with betas rarely exceeding the top end of this range, stating that 'even before the CMA applies its aiming up correction by picking the 75th percentile, we argue that it has picked a range that is biased upwards. (We also argue that Ofwat has also been too generous in its own estimates) … and, given the use of a longer sample of data, we see clear signs of an upward bias in the way the CMA (and, by implication, Ofwat) have picked their ranges for beta' We encourage the panel to consider the evidence presented by Wright & Mason in Figure 9 of their report.[151]

Debt beta:

5.30 As observed by Europe Economics, the CMA has behaved inconsistently in excluding outliers from its approach to estimating unlevered beta but not extending this approach to debt beta. The exclusion of outliers raises the lower end of the range by more than it lowers the upper end. By contrast, the inclusion of outliers materially lowers the low end of the debt beta range (with the consequence of raising the final equity beta).

[150] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020.
[151] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, p. 15.

5.31 The CMA adopts a range for debt beta (0.0 – 0.17) which uses zero as its lower bound despite stating: 'we have reviewed the decomposition approaches presented by Ofwat, and conclude that while they also have a wide range of uncertainty, they provide a compelling case that the regulatory model should include a positive debt beta'[152]. In other words, the CMA implicitly considers that a zero debt beta is not a credible number, but includes it in its stated range anyway.

5.32 Using a consistent treatment of ranges for the beta, either excluding outliers for both ranges or including outliers for both ranges, Europe Economics find that CMA's range for re-levered notional equity beta might look as follows:

a) If outliers were excluded from both unlevered beta and debt beta, thereby using the CMA range for unlevered beta but a range with 0.05 (the lowest proposed by submissions from Anglian Water or Third Parties) as the lower bound instead of 0, the final equity beta range would become 0.65 to 0.79.
b) If outliers were included for both, so using the CMA range of 0 to 0.15 for debt beta but assuming the CMA did not exclude outliers in the estimation of unlevered beta, the unlevered beta range would become 0.27 to 0.31 and the final equity beta range would become 0.65 to 0.78. (Applying the CMA's aiming up methodology this would imply a final point estimate for the equity beta of 0.75 versus the CMA's value of 0.76.)

5.33 We ask that the CMA, in its final detemination, adopt a more consistent approach with regard to excluding outliers, when considering the equity and debt beta evidence.

[152] Competition and Markets Authority, 'Provisional findings report', September 2020, paragraph 9.314.

6. Company specific adjustments to the allowed return

The CMA's provisional findings

6.1 The CMA has decided to provisionally award Bristol Water a 10 basis point uplift to its provisional sector cost of embedded debt, while provisionally deciding to allow no uplift for the cost of new debt, or the cost of equity. In addition, the CMA has not made a company-specific assumption around Bristol Water's notional share of new debt.

Benefits test

6.2 The CMA has not made its company-specific uplift conditional on passing a benefits test. It took the view that 'the level of the cost of capital should be set at a level which allows a notional small company to finance its activities'.[153] The CMA cited the benefit of regulatory consistency as well as an expectation from investors in smaller companies that Ofwat would consider applying a company-specific adjustment for as long as there is a higher cost of financing those companies.[154] It also referred to its assessment, from its 2015 redetermination of Bristol Water's price control, that it did not consider that there was a clear link between the relative position of small companies within benchmarking and the efficient level of the cost of capital.[155]

6.3 While we consider that consistency with previous regulatory determinations is important, we note that as discussed below, after allowing a cost of equity premium in previous reviews, the CMA rightly proposed in its provisional finding not to allow for such a premium at PR19. It is therefore entirely reasonable to consider its position on the cost of debt. We also note that a number of smaller water companies do not receive a premium on debt at PR14 or PR19, so consistency with previous decisions do not point to a particular approach and the CMA's position may well reduce rather than improve regulatory certainty.

6.4 We remain unconvinced that customers of smaller companies ought to pay more for their water than customers of larger companies due to decisions of the owners to maintain current ownership structures in place. The pattern of

[153] Competition and Markets Authority, 'Provisional findings report', September 2020, p.614, paragraph 9.448.
[154] Competition and Markets Authority, 'Provisional findings report', September 2020, p.614, paragraph 9.445.
[155] Competition and Markets Authority, 'Provisional findings report', September 2020, p.614, paragraph 9.448.

mergers and takeovers of smaller companies in the sector show that number and size of companies has changed significantly since privatisation. The regulatory framework ought to provide appropriate incentives for ownership structures to evolve over time reflecting the customer interest. We consider the benefits test takes account of customers' interests in making decision on allowed returns for smaller companies. We are concerned that the CMA's approach in the provisional findings privileges the interests of investors over customers and does not given appropriate weight to all our duties. It also provides artificial incentives to embed inefficient ownership structures in place for customers who cannot choose their water company.

Cost of debt uplift

6.5 We continue to consider that Bristol Water should no longer be considered a small company for the purposes of the company specific adjustment assessment. This is demonstrated by the company's achieved cost of embedded debt, which is lower than several water and sewerage companies, and its recent ability to tap financial markets at rates comfortably lower than our final determination allowance and that set by the CMA.

6.6 While disappointed at the CMA's decision to award Bristol Water an uplift, we recognise that the precise point at which a formerly small company develops sufficient scale to shed its financing disadvantage is not straightforward to identify, with considerable judgment required. We therefore welcome the recognition by the CMA that Bristol Water is a borderline case, that there will be significantly less need for the company to request a company specific adjustment on embedded debt at future price reviews, and that the company does not require an uplift to its allowed cost of new debt.

6.7 The level of the CMA's uplift of 10 basis points above the sector benchmark is consistent with Europe Economics' updated spread-to-gilt analysis suggesting a 10 basis point uplift to the sector benchmark is appropriate for the notional small company.[156]

6.8 We agree with the CMA's assessment that the share of new debt is not structurally lower for small companies.[157] To prove the company's claim to the contrary we would expect evidence that small companies have permanently lower refinancing needs and/or lower investment requirements. Bristol Water

[156] Ofwat, 'Reference of the PR19 final determinations: Response to Bristol Water's 27 May submission to the CMA', June 2020, p. 7 paragraph 2.7.
[157] Competition and Markets Authority, 'Provisional findings report', September 2020, p.624, paragraph 9.485.

has not evidenced this in its submissions, and we agree that the company's substantial issuance of new debt in 2015-20 is not helpful to its case.

Cost of equity uplift

6.9 We strongly endorse the CMA's provisional decision to not allow an uplift to Bristol Water's allowed cost of equity.

6.10 We agree with the CMA's conclusion that the high market-to-asset ratios for equity transactions involving smaller companies suggest that these companies do not face a material risk premium to their cost of equity. At a more fundamental level, Bristol Water has repeatedly failed to demonstrate how its preferred measures of operational gearing drive higher systematic risk exposure in a small notional company. This suggests that any uplift is not justified.

7. Gearing outperformance sharing mechanism

7.1 We introduced the gearing outperformance sharing mechanism (hereafter referred to as the 'gearing mechanism') in our final determinations to address a long-held concern that companies and their investors enjoy much of the benefits of adopting financial structures where gearing levels are well in excess of the notional level and transfer risks to customers. Customers are exposed to the risk of poorer service and reduced investment through the impact of higher levels of gearing on financial resilience.

7.2 We considered that in the absence of the gearing mechanism, the regulatory arrangements could distort company incentives on choosing financial structures without full consideration of the potential impacts on customers and wider stakeholders.

The CMA's provisional findings

7.3 The CMA states that our concerns about the costs customers face where water companies have gearing levels well above the notional level are legitimate, and this increase in gearing could have an adverse effect on financial resilience.[158] Yet, the CMA has provisionally decided not to include the gearing mechanism, stating that if our existing regulatory tools are insufficient, it would encourage alternative remedies targeted more directly at specific financial resilience issues, with a full assessment of the benefits and costs.[159]

7.4 In reaching this view, the CMA states it has concerns regarding both the effectiveness of the gearing incentive mechanism and its design.[160] The CMA also states it is concerned that the mechanism as proposed would represent a significant break from a well-established regulatory approach and may be seen by investors as punishing companies for previously sanctioned capital structures without offering sufficient evidence, clarity of justification or time to make cost-effective adjustments.[161]

[158] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 657, paragraph 9.623.
[159] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 658-659, paragraph 9.630.
[160] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 658, paragraphs 9.625-9.627.
[161] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 658, paragraph 9.628.

A summary of our response

7.5 The risk and return framework is designed to align the interests of companies and investors to those of customers and to allocate risk to the party best able to manage it. The current framework incentivises companies to deliver stretching levels of efficiency and levels of service that improve over time.

7.6 The CMA agrees that there are important risks associated with poor financial resilience prior to reaching a default event and that these are an appropriate consideration as part of the financial framework.[162] The CMA also makes clear that by not including the mechanism, this should not be seen as downplaying the range of risks that may impact long-term financial resilience within the sector.[163]

7.7 The primary purpose of the gearing mechanism is address a gap in the regulatory framework – to incentivise companies to reduce gearing and consequently reduce the risk to customers of financial distress and administration. We are concerned that, in the absence of the mechanism, perverse incentives remain that encourage companies and investors to have highly geared structures without bearing the full risks of these structures. The mechanism is intended to curb these perverse incentives.[164] Given this concern, if the CMA does not agree with the design of the mechanism, we think it would be more appropriate for the CMA to substitute a different mechanism, or amend the existing mechanism, rather than leave the concern unaddressed.

7.8 The CMA encourages us to consider alternative remedies targeted at other measures of financial resilience, but in doing so sets out that we have legitimate concerns that customers face costs where water companies have gearing well above notional levels, and this increase in gearing could have an adverse effect on financial resilience. However, the CMA proposes no remedy to address this issue, suggesting only that we should consider alternative remedies targeted more directly at specific financial resilience. We do not understand how this is consistent with the fact that the CMA is obliged to take the regulatory framework as it finds it.

7.9 The gearing mechanism is only one measure within a suite of measures we apply. We agree there are many factors that impact on financial resilience - the

[162] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 649, paragraph 9.587.
[163] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 658-659, paragraph 9.630.
[164] Our description of the mechanism as an 'outperformance sharing mechanism' may therefore be unhelpful as it does not capture the full aims of the mechanism.

gearing mechanism does not and is not intended to address all financial resilience issues. It is intended to complement other regulatory tools such as the regulatory ring-fence and the special administration provisions but targeted at the specific concern that companies and shareholders are not bearing all the risks associated with deviating from the notional capital structure. There is nothing else in the regime that addresses this issue.

7.10 The gearing mechanism is targeted to redress the imbalance that companies and investors will not necessarily factor in the need to ensure that financing choices are in the long-term interests of customers and wider stakeholders. If the CMA retains its provisional position, the incentives for these companies to make financing choices that are not aligned with the long-term nature of the sector will remain.

7.11 The CMA is concerned that a gearing mechanism which targets the whole sector with penalties for gearing above a certain threshold may not be the most effective approach for addressing our legitimate concerns.[165] This misses the point; there are many factors that can impact on financial resilience, but empirically, there can be little dispute that high levels of gearing reduce resilience to shocks or the consequences of ongoing poor performance. The gearing mechanism is targeted only at those structures that may create greatest risks for customers and stakeholders; of the 17 companies we regulate, eight reported gearing above 70% as at 31 March 2020.

7.12 At a time when returns are reducing, the impact of higher gearing on financial resilience will be even more acute, so it is more important now than ever to incentivise companies and their investors to seek ways to strengthen balance sheets. We think the current precarious situation of some companies has been brought about by poor decisions on capital structure that were made to benefit investors rather than to protect the long-term interests of the regulated companies and their customers.

7.13 The CMA states that 'if a highly geared company chooses to remain highly geared and share the benefit with customers, this appears to do nothing to reduce the risks associated with leverage while diminishing the cash that the company will have available to deal with financial shocks that may occur'.[166] We agree with the CMA that a company can choose to stay highly geared and share benefits with customers but this ignores the incentive of companies to reduce gearing; the CMA's view is at odds with the intended effect of a

[165] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 650, paragraph 9.590.
[166] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 658, paragraph 9.626

regulatory regime that places considerable weight on incentives to align company and investor interests with those of customers. In our experience, the absence of a gearing mechanism has done little to incentivise investors to seek opportunities to strengthen balance sheets in the context of the expected lower allowed return at PR19. Once the benefits to investors of higher gearing are reduced, decisions on capital structure will be made for more rounded reasons.

7.14 Furthermore, the CMA's provisional findings increase the concerns we have about financial structure. An 'aimed up' return, together with removal of the gearing mechanism and an absence of view on a reasonable level of dividends means the disputing companies and their investors have little incentive to follow through on commitments to improve financial resilience. The CMA defers all such responsibility to the credit rating agencies, substantially reducing the incentive on companies to take account of customer interests when making financing decisions.

7.15 In reaching its decision, the CMA has failed to fully consider the evidence we provided on the relevance of Network Rail and Metronet, placing weight only on the experiences of Wessex Water and Dŵr Cymru.[167]Although Wessex Water and Dŵr Cymru are of course in the water sector, those examples illustrate how our regime can work effectively to protect regulated companies (and their customers) from resilience problems elsewhere in the corporate group. As such, the CMA appears to have ignored our evidence and has made an error using them as examples where the ring fence has protected against the types of risk from high gearing of the regulated company itself. The specific risk that the gearing incentive mechanism is targeting is the risk that is created within the structure of the regulated company itself, and here Network Rail and Metronet are the most relevant cases.

7.16 The gearing mechanism might be an imprecise tool, but as we set out in our 'Putting the sector in balance: position statement' our cost benefit analysis estimated that the benefit companies would transfer to customers is in the range £170 million to £230 million, much smaller than the risks that arise absent the mechanism. [168] As the CMA has recognised our concerns as legitimate, the need to protect the interests of customers implies that it should

[167] Ofwat, 'Risk and return – additional submission following our hearing on 22 July', 5 August 2020.
[168] Ofwat, 'Putting the sector in balance: position statement on PR19 business plans', July 2018, p. 48, In 2004 former Rail Regulator Tom Winsor put the overall cost of the government's decision to put Railtrack into administration at £11-14 billion; and in 2009 the National Audit Office estimated that the failure and entry into administration of Metronet in 2007 led to a direct loss to the taxpayer of £170-£410 million.

correct the mechanism if it does not agree with our design rather than leave this risk to customers and other stakeholders.

7.17 In the remainder of this section, we provide further detail about the design and introduction of the gearing incentive mechanism.

Adequacy of existing regulatory protections

7.18 The CMA states there are a range of existing regulatory tools in place that should help mitigate financial risks and their consequences and which have been successfully deployed without obvious harm to either customers or taxpayers. It states that recent downgrades to credit ratings may already be exerting pressure on management and shareholders to reduce gearing.[169] The CMA states that there should be sufficient demand from alternative investors if a company was to go into a special administration process.[170]

7.19 We consider this misunderstands the nature of the existing regulatory tools and overstates the beneficial impact of rating agencies. The regulatory ring-fence is designed to help to mitigate the impact on customers from the failure of companies – it does not reduce the likelihood of companies experiencing financial distress nor does it provide incentives for companies or their investors to avoid failure. Indeed, as we show below, the ring-fence may well distort risk allocation and protect interests of debt investors in a way that encourages excessive gearing.

7.20 For some time we have held significant concerns that some companies have not been taking adequate steps to secure their long-term resilience. While we agree credit rating agencies have a significant role to play in providing warning signals about potential failures, this does not provide protection against risk of failure - as was seen in the banking crisis and has been seen in numerous other corporate failures. Although we think the special administration process is an important safety net, it is much better to have a steady-state resilient sector. In our view additional protections are therefore necessary for a long-term sector.

7.21 A number of companies have reflected on the risks associated with high levels of gearing and signalled the desirability of reducing their gearing, for example:

[169] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 657-658, paragraph 9.624.
[170] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 649, paragraph 9.588.

a) SES Water set out in its 2020-25 business plan that 'We recognise the importance of Ofwat's agenda to put the sector back in balance and have already taken decisive action. By the start of 2020 we will have reduced our level of gearing from 77% to below 60% - increasing our financial resilience'.[171]
b) Thames Water, in its 2020-25 business plan, set out 'this section describes our capital structure and the changes which we plan to make to enhance its resilience and to significantly increase the equity buffer – which we are proposing after listening to our customers views on gearing and financial outperformance. An increased equity buffer provides benefits to customers through reduction in the risk that cost shocks or financial distress faced by the company will adversely impact them in terms of service provision or cost'.[172]
c) Yorkshire Water set out 'gearing (this is the proportion of debt to the overall value of the company) is important to our resilience because sufficient headroom is an important option, should we need to borrow money to respond to unforeseen events. Our gearing is relatively high within the water industry and we have taken measures to strengthen our financial resilience and reduce gearing'.[173]

7.22 While we have seen commitments from Anglian Water and Yorkshire Water to improve resilience and reduce gearing through 2020-25, the absence of a gearing mechanism will reduce the incentive for these companies to follow through on these commitments.

7.23 No alternative to the gearing mechanism is proposed in the provisional findings. Alternative solutions, such as a hard stop on the level of gearing or tightening the credit rating requirements, are significantly more intrusive than the incentive mechanism applied in our determination. Furthermore, such options would require licence changes to implement.

7.24 Recent experience in relation to less contentious changes to ring-fencing conditions (to make these conditions more consistent across the sector) demonstrates that this is not necessarily a straightforward process. One company did not agree to the licence change, so some inconsistencies continue and can only be resolved by agreement with the company or following an administratively burdensome reference to the CMA. More intrusive requirements also go against the incentive based principles of economic

[171] SES Water, 'Our business plan 2020 to 2025', September 2018, p. 8, Executive summary, Financeable and efficient.
[172] Thames Water, 'PR19 – Appendix 6 – Risk and return', September 2018, p. 8, paragraph 1.38.
[173] Yorkshire Water, 'Our PR19 plan', September 2018, p. 97.

regulation. An incentive based mechanism allows for an element of choice for companies that rules based approaches may not.

The Modigliani-Miller theory needs to be interpreted in context

7.25 The CMA states that it accepts the broad tenet of the Modigliani-Miller approach to the cost of capital whereby as gearing increases, the cost of equity increases offsetting risks to those returns. The CMA states that it supports the view that outperformance of the WACC set by regulators due to financial outperformance is a matter for management and shareholders, as long as the associated risks of deviation from the notional capital structure are also borne by managers and shareholders.[174] The CMA also recognises that we have legitimate concerns that customers face costs where the water companies have gearing well above notional levels.[175]

7.26 The CMA sets out that the 50:50 sharing mechanism assumes the cost of equity is invariant with gearing once borrowing increases above the trigger level of 70%. The CMA states that for our approach to reflect outperformance at all, it would imply that for higher gearing, the cost of equity increases at half the rate implied by the Modigliani-Miller theorem.[176]

7.27 We have previously set out our view that the Modigliani-Miller theorem does not hold in the water sector.[177] And in their accompanying submission to our response, Wright & Mason, argue that 'a long literature has developed to examine the consequences of departures from the MM assumptions. In short, very few who work in the field believe that the MM theorem actually holds'.[178]

7.28 That the Modigliani-Miller theory does not universally hold seems to be generally accepted in the literature; there are a plethora of academic articles that examine whether the theory holds in different markets and sectors, and propositions of alternative theories. In their formative text book 'Principles of

[174] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 653, paragraphs 9.605-9.606.
[175] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 657, paragraph 9.623.
[176] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 654, paragraph 9.609.
[177] Ofwat, 'Putting the sector in balance: position statement on PR19 business plans', July 2018, pp. 46-50 and Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statements of case', May 2020, pp. 144-145, paragraphs 5.13-5.16.
[178] [178] Wright & Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020.

Corporate Finance', Brealey, Myers and Allen first explain the Modigliani-Miller theory and then examining the situations in which it does not hold. Their exposition of the Modigliani-Miller theory is illuminating:

7.29 'We believe that in practice capital structure does matter, … If you don't fully understand the conditions under which MM's theory holds, you won't fully understand why one capital structure is better than another. The financial manager needs to know what kinds of market imperfection to look for'.[179]

7.30 They go on to say:

> 'The most serious capital market imperfections are often those created by government. An imperfection that supports a violation of MM's proposition 1 also creates a money-making opportunity." And "If debt policy were completely irrelevant, then actual debt ratios should vary randomly from firm to firm and industry to industry. Yet almost all airlines, utilities, banks, and real estate development companies rely heavily on debt. […] The explanation of these patterns lies partly in the things we left out of the last chapter. We mostly ignored taxes. We assumed bankruptcy was cheap, quick, and painless. It isn't, and there are costs associated with financial distress even if legal bankruptcy is ultimately avoided'.

7.31 In the water sector, the presence of a regulator along with the special administration regime violates Modigliani-Miller's assumption of no government intervention creating an opportunity for companies to exploit. According to Modigliani-Miller, investors demand higher returns as gearing increases to compensate for the increased risk of the company facing financial distress or ultimately failing. In the water sector, companies benefit from the protections that shield them from financial distress or the full effects of failure. Investors will expect that faced with a company experiencing financial distress a regulator might adopt a more lenient approach and enable the company to recover some, or all, of the costs of distress from customers. A similar expectation is likely to arise with respect to the special administration regime; investors, in particular debt investors, are unlikely to expect to be exposed to the full costs of administration, the costs being recovered either from the customers directly, or from general taxes (which equally impact customers) – which, as articulated by the DTI results in a lower required return on capital by the investor.[180]

[179] 'Principles of Corporate Finance', Tenth Edition, Richard Brealey, Stewart Myers, and Franklin Allen, McGraw-Hill
Irwin, p. 418
[180] In DTI The drivers and public policy consequences of increased gearing, 2004, page 10

7.32 We provide a fuller explanation of the application of the Modigliani-Miller theorem to water in Annex A3. We ask the CMA revisit its decision to remove the gearing mechanism in the context of the academic literature. We also ask the CMA to reconsider its decision in the context of the views of the DTI in 2004, whose statement below is also relevant to the stringency of the CMA's decisions in a number of respects in its provisional determination.

> 'Academic literature indicates utility companies react to their regulatory climate by adjusting capital structure. Managers can mitigate the consequences of unfavourable regulation by gearing up as higher debt ratios are associated with greater levels of financial distress. It can be argued that where this occurs, regulators hands become tied – i.e. they are unable to enforce a tough regulatory settlement while still acting in line with the duty to ensure companies are able to finance their functions. This reduces the likelihood of a tough price cap, reducing the risk facing the firm and hence its costs of capital.'[181]

The CMA has not engaged with some previous comments we submitted on the incentive mechanism

7.33 The CMA has not engaged with the views of our advisers, Europe Economics,[182] that set out the gearing mechanism does not hinge on adopting a different interpretation of finance or economic theory.

7.34 Europe Economics set out that a mechanism to deter firms from becoming too highly geared may be a prudent regulatory approach consistent with the underlying rationale for most economic regulation, that of protecting customers in situations where the regulated firm has market power. In summary Europe Economics conclude that the gearing mechanism is justified as a means to (i) compensate customers for the additional risk of service interruption; (ii) compensate the regulator for the risk of bearing additional potential costs in managing a situation of default; and (iii) deter firms from artificially over-gearing in order to game the regulator. Europe Economics set out that the embedded debt allowance partially shields firms from financing risks on debt. Therefore, regulated water companies have an incentive to gear up beyond their economically-optimal level of gearing to take advantage of this shield, passing additional risk on to customers.

[181] Ibid, page 11.
[182] Europe Economics, Further advice on the allowed return on capital for the water sector at PR19 – betas and gearing, May 2020, pp.8-9

7.35 It also appears that the CMA has also not considered our arguments that gearing well above the notional level could have other effects, including to (i) increase the likelihood of future financeability issues, and (ii) re-opening mechanisms to increase funding where a firm is in financial distress, given our financing duty.[183] We argue these factors may increase future expected cash flows (because of a perceived opportunity for additional revenue in distress scenarios) and they might be perceived to reduce exposure to systematic risk (because investors may perceive that in the case of downside shocks that risks are more likely to be borne by customers).

7.36 There is the potential in both of these cases for the assumptions that may underpin capital structure choices to cut across the Modigliani-Miller theorem, the first because expected revenue might be expected to rise with gearing, the second because exposure to aggregate systematic risk may be perceived to reduce with higher gearing. These factors may increase future expected cash flows (because of a perceived opportunity for additional revenue in distress scenarios) and they might be perceived to reduce exposure to systematic risk (because investors may perceive that in the case of downside shocks that risks are more likely to be borne by customers). There is the potential in both of these cases for the assumptions that may underpin capital structure choices to cut across the Modigliani-Miller theorem, the first because expected revenue might be expected to rise with gearing, the second because exposure to aggregate systematic risk may be perceived to reduce with higher gearing.

Mechanism design

7.37 The CMA challenges the 50% sharing rate included in the gearing mechanism, stating that it assumes the cost of equity is invariant to gearing once borrowing increases above the trigger level of 70%.[184] We accept that the choice of sharing rate requires some exercise of regulation judgement.

7.38 We note the parallel to the choice of cost sharing rates, where the CMA appears to assume that rates of between 45% to 55% provide appropriate incentives to outperform cost allowances, yet the CMA have not pointed to any underpinning evidence or literature for making this assumption.

7.39 Setting the appropriate rate requires the use of regulatory judgement, but this is no different from the judgements made elsewhere in the provisional findings.

[183] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statements of case', May 2020, p. 144, paragraph 5.16.
[184] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 654, paragraph 9.609

There is evidence that investors set gearing rates well above notional level in the absence of an incentive, preferring risky financial structures and that investors derive benefits from doing so. This suggests that a default to a zero rate (or not having the incentive) will not produce optimal outcomes. While it could be argued to set incentive rate to 100% and thus remove all benefits from equity holders could be justified as this would transfer all benefits to customers, this would imply that company choice of financing structure is restricted to near notional level of gearing.

7.40 The 50% rate provides equal sharing of benefits from gearing up between equity holders and customers provides tangible benefits to customers and reduces the incentives for choices of unduly risky structures by investors. As with any incentive mechanism, we will consider impact of incentives on behaviour and how companies respond when we reset at future price reviews.

7.41 Furthermore, for the gearing mechanism to be effective, it needs to provide a real incentive for companies to consider the impacts of their financing decisions on customers.

7.42 In terms of the level at which the mechanism should apply, our concerns lie with companies with high levels of gearing, well above the notional level. There is no definitive criteria for the level of gearing at which the mechanism should apply, though Wright & Mason point to a gearing threshold of 55%-70% as being supported by credit rating agencies.[185] And as none of these criteria are definitive, but would point to value well above 60% and well below 80% (which is very high level of gearing).

7.43 We consider that our 50:50 sharing mechanism for companies with gearing above 70% is necessary for the mechanism to have sufficient bite. We did modify the mechanism we originally proposed to include a glidepath that was similar to that proposed by Yorkshire Water in its response to the draft determinations. We estimated gearing mechanism payments to be around £210 million across all water companies based on gearing forecasts in the final determinations. This is a gain to customers and a transfer from investors.[186] However, where highly geared companies improve their financial resilience, we consider the resulting benefits to customers are likely to be far greater.

[185] Wright& Mason, 'Comments prepared for Ofwat on the CMA's provisional findings: Cost of capital considerations', October 2020, pp 30-31
[186] Ofwat, 'PR19 final determinations: Aligning risk and return', December 2019, pp. 129-130.

Introduction of the gearing mechanism

7.44 The CMA states that the gearing mechanism appears to introduce a significant change to the regulatory framework without sufficient opportunity for companies to make the required changes in a cost effective manner. The CMA also states that the evidence provided by the disputing parties suggests that the 74%-70% glidepath would not be adequate mitigation against the relatively abrupt implementation of the mechanism.[187] The CMA also sets out that it considers that if a gearing mechanism or other mechanism is to be implemented with the intention of encouraging firms to reduce gearing, it would be appropriate to do a further assessment of the time required to achieve those reductions and the cost involved in doing so.[188]

7.45 Firstly, we note the sector has two years notice of our proposals and four years since first consultation on gearing mechanism in 2016. We have also raised concerns about financial resilience and excess gearing with individual companies and we have been clear that companies needed to reduce gearing and improve financial resilience well ahead of the PR19 price review. In addition, our mechanism is limited to financing structures with gearing levels well above the notional structure. We have provided a glide path to transition to the new arrangements. We have considered the speed at which companies are able to reduce gearing as part of the design of our mechanism. We consider that our approach of early consultation, consistent signalling of our concerns about gearing and the introduction of a targeted incentive with a glidepath is consistent with regulatory best practice. The CMA appear to imply that having identified a serious concern and published a policy two years ahead of the price review, we should defer any further action until beyond 2025. We consider such an approach has little or no precedent, would wilfully ignore a serious issue and is not consistent with regulatory best practice.

7.46 Even with the introduction of the gearing mechanism, companies remain responsible for how they finance themselves as the mechanism applies on a forward-looking basis.

7.47 There is no requirement for companies to adjust financial structures. This is a matter for companies and their investors to determine. Even if companies are not able, or choose not, to reduce gearing below the thresholds in the short term, companies are still incentivised to reduce gearing under the glidepath in order to reduce sharing payments. To the extent that companies reduce

[187] CMA, 'Provisional findings report', September 2020, p. 657, paragraph 9.621.
[188] CMA, 'Provisional findings report', September 2020, p. 657, paragraph 9.622.

gearing, customers will benefit from increased financial resilience of the companies.

7.48 We have highlighted elsewhere that the industry has previously seen significant movements in gearing levels, we have provided evidence that a number of companies reduced gearing ahead of the start of the 2020-25 price control period. It should therefore be reasonable to assume that it is possible to raise finance to inject into the regulated companies to reduce gearing at a similar rate – consistent with the view of a panel of the Competition Commission in 2012 who, in its decision said that 'if shareholders were able to withdraw large sums in periods with strong cash flow, it was reasonable they should also be willing to supply finance in periods of weaker cash flow'.[189]

7.49 Finally, the CMA is incorrect to suggest that the gearing mechanism was introduced without a full assessment of the benefits and costs. We are concerned that this indicates that the CMA has not considered our published reasons and evidence for the introduction of the gearing incentive mechanism.

7.50 The mechanism was subject to appropriate consultation, in which we assessed the policy would result in a transfer of between £200 million and £230 million from investors to customers over the 2020-25 period, representing 0.3% of the expected RCV as at 31 March 2020 or 0.4% of expected turnover for the period 2015-20.[190] We amended this estimate to £210 million as a result of the glidepath and changes to estimating gearing levels in the final determinations. We consider that the potential costs to customers, and therefore the benefits of companies reducing gearing, are far higher than the transfer of benefits through the gearing mechanism. The cost to companies of the gearing mechanism was set in the context of the cost of the failures of other regulated businesses, for example, Railtrack at £11-14 billion and Metronet at £170-410 million.[191]

7.51 Companies also have considerable opportunity to take advantage of refinancing that they would have taken in any case during the 2020-25 period

[189] Competition Commission, 2014, 'Northern Ireland Electricity Limited price determination – A reference under Article 15 of the Electricity (Northern Ireland) Order', 1992, p. 17-21, paragraph 17.100.
[190] Ofwat, 'Putting the sector in balance: position statement on PR19 business plans', July 2018, pp. 69-73.
[191] Ofwat, 'Putting the sector in balance: position statement on PR19 business plans', July 2018, p. 48, In 2004 former Rail Regulator Tom Winsor put the overall cost of the government's decision to put Railtrack into administration at £11-14 billion; and in 2009 the National Audit Office estimated that the failure and entry into administration of Metronet in 2007 led to a direct loss to the taxpayer of £170-£410 million.

to adjust gearing. As such, while there is some modest incremental costs borne by equity investors, these are small in relation to the benefits to customers.

8. Other risk and return issues

Table 8.1: Ofwat response to other risk and return provisional findings

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Retail margin adjustment (All)	pp. 638-643 paragraph 9.545 to 9.564	The CMA proposes a retail margin adjustment of 0.08% for its provisional findings.	We continue to support the need for a retail margin adjustment: equity beta is estimated at the appointee level, and so unavoidably reflects wholesale and retail risks, while the retail margin is set to reflect retail risks. Retail risks are higher than wholesale as bad debt costs fall to the retailer in the first instance, rather than to the wholesaler. An adjustment to the appointee allowed return is thus required so as to avoid double counting company compensation for retail risks. We support the CMA's approach of estimating the retail margin adjustment as the retail margin revenue minus bottom-up estimates of relevant costs. We agree the relevant costs are a) return on fixed assets and b) return on working capital. The CMA's adjustment is 0.08% compared to 0.04% at final determinations. We understand this reflects the net debtor days balance (including creditors as well as debtors) – this is a well-reasoned and justified improvement on our final determinations estimate, which we support.
Dividends – approach for financeability (All)	p. 693, paragraph10.69	The CMA has set out that it has retained our assumptions in respect of other company specific items including dividends because these represent a reasonable starting point for the testing of ratios.	Our approach, as set by the CMA, was to restrict dividends where real RCV growth over 2020-25 exceeds 10% to maintain gearing close to the notional level of 60%. Where companies forecast high RCV growth, we consider it is appropriate for equity to contribute to the funding of this growth and the CMA should retain this approach for its final determinations. Of the disputing companies, we restricted dividends in the final determination of Anglian Water. In its response to the request for information RFI017, Northumbrian Water set out that the CMA should revisit the dividend yield and growth assumptions as these were both set in relation to the nominal cost of equity.[192] We do not consider it is necessary to increase the dividend yield and growth assumptions from the 3.0% yield and 1.18% growth level used for the final determinations even if the CMA concludes a higher cost of equity is appropriate.

[192] Northumbrian Water, 'NWL PR19 CMA redetermination – RFI017, Northumbrian Water response to RFI017', October 2020, page 2, paragraph 12.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			In our final determinations, we set an expectation that a reasonable base dividend for companies performing in line with our determinations was 4%. A consequence of the CMA's provisional decision to set a high cost of capital is that disputing companies will be able to earn excess returns and pay excessive dividends. We expect the CMA to provide guidance as to what it considers it is reasonable for companies to do with these excess returns.
PAYG rates (All)	p. 689, paragraph 10.52, p 699, paragraph 10.90 and p.701, paragraph 10.97	The CMA set out that the PAYG rate is the proportion of a company's Totex allowance that is funded through revenue, rather than added to RCV, and is therefore comparable to operating expenditure, which companies normally seek to recover from customers in the period in which it is incurred. The CMA has set out that it has modelled PAYG using the same PAYG rates as Ofwat. The CMA state that the disputing companies have not explicitly requested the CMA to re-determine PAYG rates because, it assumed, they would prefer to recover the revenue in the current	We note that the CMA has removed the uplift to PAYG rates applied in the final determinations of Anglian Water, Northumbrian Water and Yorkshire Water in its calculations of allowed revenues in the provisional determinations.[193] To be consistent with companies' approaches to PAYG rates in business plans, the CMA should adjust PAYG rates to take account of its final Totex decisions and its view on the use of PAYG as a lever to improve financeability. We set out the most appropriate mechanism for re-determining PAYG rates in our response to the request for information RFI017

[193] For example, Competition and Markets Authority, 'Provisional findings report', September 2020, p. 739, paragraphs 10.62. Table 12-6: Calculation of wholesale allowed revenue (£ million), Table footer 1 (PAYG) "This figure is calculated by applying Anglian Water's PAYG rates (before Ofwat accelerated any revenue) …"

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		period rather than defer it until PR24.	
Credit ratios	p.689, paragraphs 10.56	The CMA notes that the rating agencies' stance on whether or not advancing revenue by adjusting PAYG or RCV run-off rates would affect a credit ratings assessment. It sets out that, accordingly, in its financeability assessment it has calculated credit ratios consistent with the approach taken by both Moody's and Standard & Poor's credit ratings agencies.	We expect the CMA to revisit its approach on financeability. The CMA should consider all other options to resolve financeability as beneficial to its 'aiming up' approach. We set out in Section 3 how the CMA has not adequately considered our representations on financeability. The CMA could reconsider its assumptions in relation to notional gearing, index-linked debt and a faster transition to CPIH, all which impact on cashflow financial ratios
Credit ratings	pp. 692-693	The CMA sets out the results of recent ratings commentaries concerning each of the Disputing Companies. The commentaries indicate that the companies retain investment grade credit ratings with a negative outlook and that Bristol Water and Northumbrian Water have experienced downgrades to their ratings.	It is difficult to infer from the provisional findings what weighting, if any, the CMA puts on the ratings commentaries, other than that the credit rating is based on a wide range of relevant factors. We have previously set out the rationale for the ratings decisions alongside our view of the capital structures of the disputing companies.[194] The decisions largely reflect the specific performance and capital structure for each company as set out in our statement of case.

[194] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statement of case', May 2020, pp. 16-27, paragraphs 2.19-2.42.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
MARs analysis	pp. 663-664	The CMA sets out the results of Europe Economics' MARs analysis and goes on to explain concerns raised by companies on the analysis.	The CMA has provided a misleading and incorrect representation of our previous submissions on MARs analysis. It's ordering is incorrect. The analysis the CMA present in table 9-25 took account of the criticisms the CMA sets out in paragraphs 9.640 to 9.943; the CMA does not take account of our representation on the issues raised by the companies. We request that the CMA accurately represents our position. Our position and response to the company claims was set out in a previous submission.[195] We ask that the CMA corrects its misrepresentation of our position in its final report.

[195] Ofwat, 'Reference of the PR19 final determinations: Risk and return – response to companies' 27 May submissions to the CMA', pp. 8-9, paragraphs 3.2-3.7.

A1 The CMA's approach to 'aiming up' is a material departure from recent and past CMA and Competition Commission practice

A1.1 The CMA's decision to 'aim up' and the scale of 'aiming up' is a departure from the CMA's recent previous practice:

- The assessment criteria applied in the provisional determination for water depart from the criteria used for NERL.
- The reasons cited for 'aiming up' in the CMA's provisional determination are a material departure from the CMA's previous practice in its NERL decision.
- The proposal to 'aim up' the allowed return on equity is a material departure from other CMA previous practice.

The assessment criteria applied in the provisional determination for water depart from the criteria used for NERL.

A1.2 The CMA applied different criteria for its 'aiming up' assessment in the NERL. We compare the criteria in table A1.1:

Table A1.1 – Comparison of the criteria used to assess the case for 'aiming up' by the CMA in its recent decision for NERL and its provisional findings in water

NERL	Water
1. Potential bias in the cost of capital range. 2. Potential asymmetries in the broader price control settlement. 3. The case for 'aiming up' including potential asymmetries in the balance of risks between getting the cost of capital too high or too low.	1. Aiming up to promote investment in new assets in AMP7. 2. Aiming up to promote investment in the water sector more broadly. 3. Asymmetry of returns. 4. Other sense-checks on the overall level of the WACC.

A1.3 The CMA has not explained why it has applied different assessment criteria in its provisional findings for the disputing water companies. It has not explained why, for example, bias in the cost of capital range was not considered in water, or why the significant focus on investment has arisen in water but was not present in the NERL case. This is a significant omission as the different features the regulated sectors means that water companies are materially less exposed to factors such as the revenue risk that arises in the airport sector.

The reasons cited for 'aiming up' in the CMA's provisional determination are a material departure from previous practice in its NERL decision.

A1.4 The CMA has not applied an assessment framework that is equivalent to its assessment of the reasons for 'aiming up' that was applied in its NERL decision. In this section, we consider the assessment it made in the NERL decision to (i) bias in the cost of equity range, (ii) its assessment of asymmetry and (iii) its assessment of 'aiming up' to promote investment.

A1.5 Firstly, in the NERL determination, the CMA considered whether the balance of probabilities in estimating the cost of capital might suggest it is more likely to be in the upper or lower end of range, before concluding that the way it had calculated individual ranges meant there was no reason it should give more weight to either end of the range.[196] The CMA has not made an equivalent assessment in its provisional findings for water.

A1.6 Secondly, in the NERL determination, the CMA considered whether its price control determination was asymmetric. It concluded that in the case of NERL, not all incentives were likely to be symmetric, for example, returns on capex, opex overspend and performance targets. But, taking account of outperformance in previous price controls, and the overall approach to the price control, the CMA recognised there was flexibility in how NERL managed its costs. Taking account of these factors, the CMA concluded the net effect of the price control was neither in favour or, nor against, NERL. The CMA has not adequately carried out an equivalent assessment in its provisional findings for water, having focussed only on its assessment of ODIs.

A1.7 Third, in the NERL determination, the CMA considered the argument that 'aiming up' may be necessary to promote investment. The CMA said it accepted there might be an argument that in the long run, customers were served by a small premium on the cost of capital, particularly if it helped avoid an 'opex bias' where companies are incentivised to run down the existing capital assets for as long as possible. But, given the premium would apply to assets already in place as well as promoting new investments, the CMA concluded the premium might only need to be small to be effective. The CMA went on to conclude that no uplift to the cost of capital was necessary as NERL had a clear incentive to identify and deliver its capital programme, both through the regulatory framework and also through broader governance, with relevant support from government (both in policy terms and as a shareholder of NERL).

[196] CMA, 'NATS (En Route) Plc / CAA Regulatory Appeal – Final Report', 23 July 2020, p. 245.

A1.8 The CMA has not carried out equivalent analysis of the regulatory incentive mechanisms or relevant support for investment in its provisional findings for water. Further, it has not reached an equivalent conclusion in its provisional findings that any 'aiming up' if required, need only be small to be effective. The 'aiming up' premia applied in its provisional findings is both material in cost of capital terms, and material in the context of expected expenditure in 2020-25 as it is applied to the whole asset base.

A1.9 In the following sections, we discuss our assessment of the reasons why 'aiming up' is not relevant to promote investment in water.

The proposal to 'aim up' the allowed return on equity is a material departure from other CMA previous practice

A1.10 The CMA has adopted an approach of 'aiming up' in other previous decisions. The reasons underpinning the decisions of the CMA and the Competition Commission to 'aim up' in the SONI, Northern Ireland Electricity (NIE) and BAA Ltd cases are not relevant to the provisional findings for water; and in the case of the CMA's decision for Bristol Water in 2015, the CMA choose not to 'aim up', setting point estimates for the risk-free rate and equity risk premium and picking a central estimate for beta.

- In 2017, the CMA agreed in its SONI determination to make an adjustment for asymmetric risk. However, in this instance, the CMA commented that the remedy reflected the unusual circumstances of the case, such that the proportion of SONI costs that were recoverable through the cost recovery mechanism were so high that without a corresponding adjustment, returns to investors would not, on average, be consistent with the cost of capital.[197] SONI's average RAB in 2015 was £7.5 million[198], which is materially smaller than the RCV of the disputing companies which ranges from £549 million and £8,162 million.

Table A1.2 – Average RCV (year average) 2019-20 for disputing companies (March 2020 price base)[199]

Water company	Average RCV (year average) 2019-20 (£m)
Anglian Water	8,161.7

[197] CMA, 'SONI Limited v Northern Ireland Authority for Utility Regulation - Final determination', 10 November 2017, p. 279 paragraph 12.102.
[198] CMA, 'SONI Limited v Northern Ireland Authority for Utility Regulation - Final determination', 10 November 2017, p. 17 paragraph 2.25.
[199] Ofwat, 'Regulatory capital values 2020', 21 March 2020.

Water company	Average RCV (year average) 2019-20 (£m)
Northumbrian Water	4,320.9
Yorkshire Water	6,860.3
Bristol Water	548.9

- In its 2015 decision for Bristol Water, the CMA concluded the mid-point in the range identified was a reasonable point estimate for beta, but chose point estimates for the risk-free rate and equity risk premium.[200] The CMA considered it was approprate to use the middle of the range for the cost of capital as the ranges identified were consistent with the different sources of evidence which they considered. The CMA's assessment concluded there was limited risk that the cost of capital would be a set at a level which was too low.[201]
- In its 2014 determination for NIE 2014, the Competition Commission calculated long run estimates of 0.31 and 0.4 for beta. It selected a range at the upper end of the range (0.35 to 0.4) as it was considered that the comparator data set used was not an exact match for NIE and its regulatory framework.[202] The same issue cannot arise in water as the CMA is basing its beta estimates on listed water companies.
- In 2007, the Competition Commission determination for BAA Ltd gave particular weight to ensure that the cost of capital was not set too low. It set a point estimate close to the top of its range taking account of the ranges it determined for the risk-free rate and cost of debt. The Competition Commission considered timely investment was a significant factor for airport users and noted in particular it was difficult for a regulator to reduce the risks of underinvestment within a regulatory period.[203] In making its decision in water, the CMA should be aware there are material differences in revenue and cost risk compared with the regulatory framework under which the Competition Commissions decision was made. Under the 2007 control, the airports took all of the volume risk associated with departures from the CAA's forecast of passenger volumes and the airports took 100% of the risk associated with departures of the allowed opex and commercial revenue allowances. These arrangements are materially different to those in water,

[200] CMA, 'Bristol Water plc - A reference under section 12(3)(a) of the Water Industry Act 1991 – Report', 6 October 2015, p. 328, paragraph 10.163.
[201] CMA, 'Bristol Water plc - A reference under section 12(3)(a) of the Water Industry Act 1991 – Report', 6 October 2015, p. 336, paragraph 10.200.
[202] Competition Commission, Northern Ireland Electricity Limited price determination - A reference under Article 15 of the Electricity (Northern Ireland) Order 1992 – Final determination, 26 March 2014, pp. 13-37, paragraph 13.183.
[203] Competition Commission, 'BAA Ltd - A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd)', 28 September 2007, Appendix F, paras. 148-153, pp. F36-F37.

where wholesale controls are subject to reconciliation for under or over recovery of wholesale revenues and reconciliations are made for variation in outturn compared with allowed costs (subject to incentive adjustments).

A2 Expected ODI performance

A2.1 Part of the CMA's justification for 'aiming up' the allowed return relates to the ODI package, which contains some penalty only and asymmetric ODIs.[204] The CMA says this exposes companies and their investors to asymmetric risk. It suggests an average performing company could face a potential loss of around 0.1 to 0.2% on RoRE, with no potential for directly offsetting rewards. It appears to equate this with an expected loss for an efficient company. [205]

A2.2 We consider the CMA's analysis to be in error. As explained in section 3, ODI performance should be considered in the round along with outperformance on financing and costs. Moreover, PR19 provides companies with greater opportunity to earn outperformance rewards than any previous price review. And history demonstrates that companies are able to meet and outperform performance expectations set in final determinations. The ability to do so lies within management control and any extra allowance for under-performance is perverse and not consistent with the need for the CMA to give effect to its statutory duties.

A2.3 The CMA's expectation that ODI performance will be asymmetrically skewed downwards is incorrect and misunderstands the nature of risk around performance in the sector. As explained in this document, we do not expect negative ODI payments for an efficient company for the following reasons:

- The CMA has not properly explained the reasoning behind its calculation that an average performing company would face a potential loss of around 0.1% to 0.2% of RoRE. Insofar as we can understand it, the explanation appears to rest on incorrect assumptions, erroneous calculations and flawed data. In particular, the CMA appears to have assumed that the distribution of performance is symmetric around the PCL.
- There are a number of reasons why operational performance should offset any asymmetry in ODI rates. These include: (a) management action to mitigate the impact of underperformance; (b) companies planning for outperformance; and (c) improvements in resilience. These combine to change the shape of the distribution of operational performance, making

[204] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 672, paragraph 9.671.
[205] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237 refers to the expected loss while p 672 paragraph 9.671 refers to the potential loss. To the extent that it is seeking to correct for this through an uplift to the WACC, we assume it is the expected loss rather than the potential loss that it is concerned with. We also presume the CMA is attempting to model an efficient company, as it would not provide correct incentives to compensate for ODI penalties arising from inefficient behaviour.

significant underperformance less likely and significant outperformance more likely, increasing the mean average performance.

- Empirical evidence considering the distribution of outturn 2015-2020 company performance against performance commitment levels shows that, where outperformance occurs, it is on average twice as great as underperformance (even though companies said they expected negative payments at PR14). This tendency to have positive outturn outperformance more than counterbalanced any asymmetries in ODI incentive structures, and overall returns were positive. We show that this conclusion holds even if we correct for the fact that some performance commitments set in PR14 were not sufficiently challenging. Moreover, the increased upside available through ODI rates in PR19 relative to PR14, together with the increased resilience spend, suggests that even further outperformance is likely in PR19. This provides strong evidence that the CMA should expect overall ODI payments in the 2020-25 period to be non-negative.

The CMA's analysis of ODI risk is unclear, based on incorrect assumptions, erroneous calculations and flawed data

A2.4 The CMA's provisional findings contains an explanation of how it calculated the ODI risk faced by an efficient company. However, the **explanation is incomplete and the reasoning unclear**, even after our request for further clarification.[206] Moreover, the reasoning does not appear to correspond to the calculations performed. It is nevertheless clear that the CMA has made a number of **incorrect assumptions**, in particular that performance commitments are distributed symmetrically around the PCL, as well as **erroneous calculations** based upon **flawed data**.

A2.5 The CMA says 'taking the net effect of the maximum penalty, and the maximum reward, available for a single PC gives to the overall financial risk of the ODIs attached to that PC – neutral (for symmetric ODIs) or downside risk (for penalty-only or asymmetric ODIs)'.[207]

A2.6 Although this sentence is unclear, we take from it that the CMA has assumed that the distribution of outcomes is symmetric around the PCL, such that PCs

[206] In a data request of 5th October, we asked the CMA to provide and explain the calculations underlying the 0.1-0.2% asymmetry on RoRE from ODIs. On 18th October the CMA responded with 4 excel files showing the calculations for each of the disputing companies. However, these provide no further explanation of how the CMA has arrived at the assumptions and the logic behind this, and hence how the RoRE ranges have been derived.
[207] Competition and Markets Authority, 'Provisional findings report,' September 2020, pp. 436-437, paragraph 7.91.

with symmetric ODIs have a mean expected payment of zero. As we explain below, we do not consider this to be the case – rather we expect the distribution to be asymmetric and mean average performance of an efficient company to be above the PCL (which is set at the median level).

A2.7 The CMA goes on to say that it 'calculated the possible penalties at P10 performance level, or by collars where this appeared more relevant'.[208] For asymmetric ODIs it compares these possible penalties with the potential rewards 'by netting against the maximum reward available for each PC'.

A2.8 The CMA has given no explanation of when it considered it relevant to use the P10 rather than the collar. Our analysis of its underlying spreadsheets suggests it used P10s even in cases where there was a collar which more accurately represents the maximum underperformance payment. Moreover, it appears to have calculated maximum rewards which are in some cases greater than the cap.

A2.9 In addition to this, the CMA also seems to have erred in how it has taken into account its provisional conclusion to add a deadband to the mains repairs performance commitment (which we disagree with – see section 3 of 'Reference of the PR19 final determinations: Costs and Outcomes – response to CMA provisional findings'). It has given no explanation of its treatment of deadbands in the provisional findings but the spreadsheets that it provided suggests that the CMA considers that adding a deadband on mains repairs leads to a higher maximum underperformance payment for Anglian Water and Bristol Water. This appears incorrect: a deadband reduces the maximum underperformance payment, because it creates a region of underperformance for which no payment is due. It appears that this is how the CMA have treated the impact of the mains repair deadband on Yorkshire Water, which is reduced. In any case, the difference in treatment between Yorkshire Water and Anglian Water and Bristol Water is not explained. The CMA has made no adjustment to reflect the deadband for Northumbrian Water. This may be related to the fact that Northumbrian Water has outperformance payments but this link has not been explained, and we would expect the deadband to reduce the maximum penalties and rewards.

A2.10 The CMA then adds together the "net downsides" for each performance commitment to get a total net downside for each company which it finds to be in the range of 1-2% of RORE. It says that 'on the basis that these scenarios

[208] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 437, paragraph 7.92.

represent P10 estimates, the expected loss would be of the order of 0.1%-0.2% RORE'[209] (although elsewhere it refers to this as the potential loss).[210]

A2.11 The CMA does not explain what the "net downside" for a PC represents. We have inferred that it is the P10 of a synthetic penalty-only PC with an ODI rate equal to the difference between the actual PC's under and out performance rates. The CMA seems to assume that this penalty-only PC would have an equivalent expected ODI payment to the actual PC. However, this assumption would rely on the distribution being symmetric around the PCL, with equal chances of out and under performance. As we show below, this is not the case.

A2.12 The CMA sums these net downsides and then divides by 10, suggesting that this then represents the expected loss. This figure could only correspond to an expected loss if there were no penalties up until the point of the P10. Even if this were true, then it is only correct to sum the P10s if the PCs were perfectly correlated, so that if one PC fails badly all PCs fail to the same extent. However, it is clearly not the case that PCs are perfectly correlated – although PCs are correlated to some extent, this correlation is not perfect.[211] The CMA recognises this, noting that 'in practice the risk of P10 downside across the package of PCs resulting in 1-2% downside will be small'.[212]

A2.13 The CMA seems to consider the impact of assuming perfect correlation will be offset as 'there is a greater likelihood than that of smaller penalties in respect of penalty-only ODIs'.[213] We take this to mean that it recognises that underperformance payments are incurred before hitting the maximum, and this will somehow offset the fact that it has overestimated the maximum downside. It is not clear why these two factors should in anyway offset each other – it seems an entirely spurious assumption. Indeed, more broadly, it is not clear why the CMA believed it could estimate the expect outcome by simply considering the extremes of a distribution – the shape of the distribution between these points will of course be very important in

[209] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237.
[210] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 672, paragraph 9.671.
[211] As set out in Ofwat, 'Reference of the PR19 final determinations: Outcomes – response to common issues in companies' statements of case', May 2020, pp. 72-80, we have estimated the extent of this correlation of this using scaling factors.
[212] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237
[213] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237

determining the expected outcome, including the extent to which it is symmetrical.

A2.14 The CMA concludes that in the round 0.1-0.2% of RORE is a reasonable estimate of the expected loss from the asymmetric incentives for an average performing company.

A2.15 We are unclear why the CMA is modelling the incentives of an average performing company, rather than an efficient company. We assume it equates the two, as it would be inappropriate to compensate for inefficient behaviour, but it does not provide reasoning for this. Moreover, the CMA seems confused as to whether this is the expected loss or potential loss. [214] We assume it is modelling expected loss, in order to correct for it in the WACC. For the reasons set out above, we do not agree that this represents the expected loss of an efficient company (or indeed the potential loss for an average company).

A2.16 Not only is the reasoning in the analysis unclear and apparently based on incorrect assumptions with regard to the distribution as well as erroneous calculations, it is also based on flawed data. In particular, it is based on the company estimates of P10 values which are used to estimate the maximum penalty for 22 PCs. Company P10 estimates have been made by companies who have an interest in emphasising downside risk, and therefore require particularly close scrutiny which the CMA does not appear to have given them.

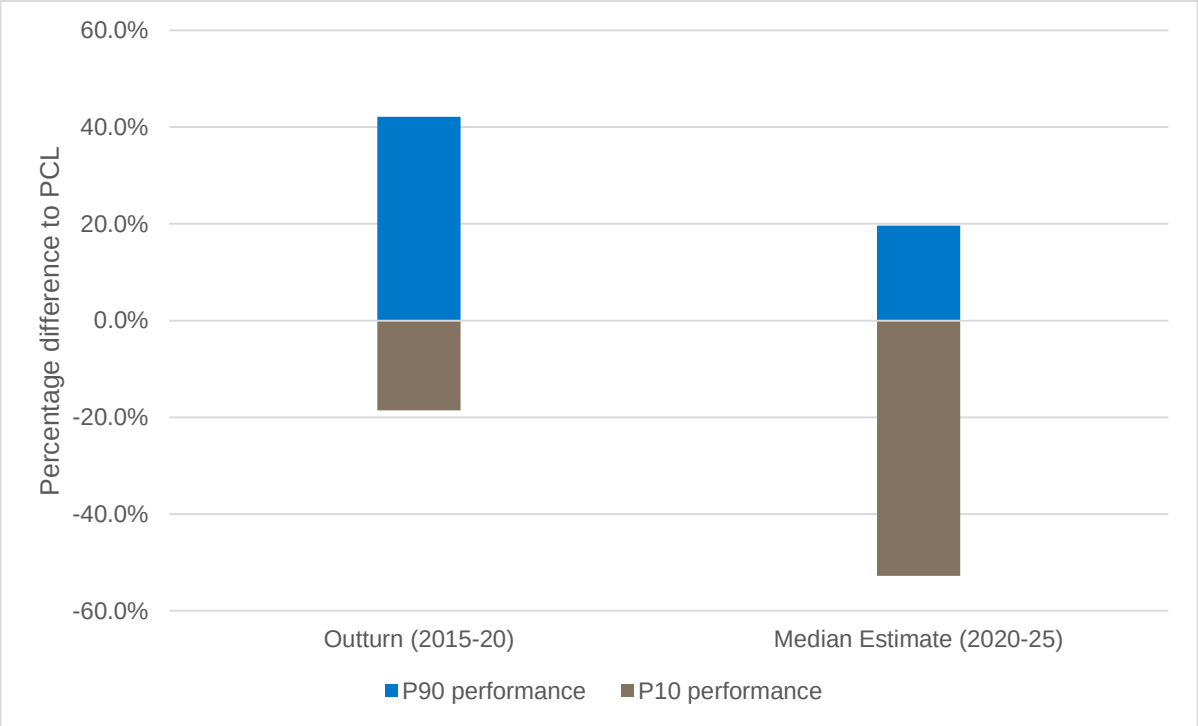
A2.17 Our concerns with these estimates are illustrated by the inconsistency of company estimates of P10 and P90 performance for the 2020-25 period with evidence from historical outturn performance from the 2015-20 period. Figure A2.1 compares outturn P10 and P90s as a percentage difference to the PCL for four PR19 common performance commitments which were also set in PR14 - leakage, water supply interruptions, internal sewer flooding and pollution incidents - to the median company estimate of P10 and P90 in the PR19 period.[215] It shows that during PR14 the outturn P90 outperformance level was significantly greater in scale than the observed P10 underperformance level. However, companies estimated the opposite for

[214] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237 refers to the expected loss while p. 672 paragraph 9.671 refers to the potential loss.
[215] Note that the P10 and P90 in these cases are the estimates of performance at the P10 and P90 levels as opposed to the underperformance or outperformance payments at these levels referred to above.

PR19 – i.e. that the potential scale of underperformance at the P10 level is more than twice the scale of the outperformance at the P90 level.[216]

A2.18 This was despite the fact that the 2015-20 period was not benign. There were a number of adverse exogenous weather events at local, regional and national levels, including flooding, the freeze thaw event, and a hot dry summer in 2018. The data also include the outcome of a number of issues caused by management failure. These included severe and systemic management failures at Thames Water and Southern Water that led to enforcement action. More isolated impacts of localised management failures were experienced throughout the period such as Anglian Water's water supply interruption failure in 2019-20.[217] This will further reduce the outturn P10 estimates below that of an efficient company in an average year which (we assume) the CMA is seeking to model.

Figure A2.1 Comparison of disputing company estimates of P10 and P90 levels for 2020-25 with evidence from 2015-20 for leakage, water supply interruptions, internal sewer flooding and pollution incidents



[216] This result is insensitive to the precise calibration of performance commitment levels (PCLs) as the scale of under and outperformance at these levels dwarfs any change in the PCL.
[217] Telegraph, Faulty valve leaves thousands without water in Leighton Buzzard, December 2019.

Management actions increase expected ODI payments

A2.19 PCLs should be stretching but achievable. We aim to set PCLs at the median level, the P50, with an equal chance of an efficient company outperforming or underperforming the PCL. If the distribution is symmetrical this will also lead to the mean average performance being at the P50.

A2.20 However, there are a number of reasons why we might expect the distribution of operational performance to have a positive skew. These include (a) management action to mitigate the impact of underperformance, (b) companies planning for outperformance, and (c) improvements in resilience. These combine to change the shape of the distribution, with the result that mean average performance is greater than the median, P50, as significant underperformance is less likely and significant outperformance is more likely.

A2.21 Taking each factor in turn:

A2.22 **Management action to mitigate the impact of underperformance.** Typically, companies do not want to fail performance commitments for both reputational as well as financial reasons, and will take management action to reduce significant underperformance, both within year and over a longer period.[218] Within year, if companies observe potential underperformance in a particular area on leading or lagging indicators, they are likely to increase management focus to reduce it. Companies may switch attention or resource from another area of the business, for example an area they are outperforming on. They may also incur additional costs to reduce the extent of underperformance – and base costs will include an allowance for this. Companies will be incentivised to choose the most effective solution, and that will minimise downside impact, by definition. A model that simply assumes companies incur the penalty payment will overestimate the downside risk.

A2.23 To give an example of how companies mitigate the impact of underperformance, in 2018-19 South East Water started the year with high leakage due to the 'Beast from the East' freeze/thaw event and also had similar impacts from the prolonged 2018 summer heatwave. Through round the clock working, and the diversion of other technical resources to the

[218] Recent evidence from other sector demonstrates how management actions can have a positive impact on performance. A recent report from Ofcom found clear evidence that regulatory incentives for Openreach led to changes in the standard of regulated services where minimum standards were set, with little change for similar services where no minimum standard was set. In addition stakeholders noted that "reputational incentives, in particular, generated a cultural shift within Openreach". Ofcom, Improving broadband and landline standards, May 2020, pp. 24-5.

leakage effort it managed to repair an additional 1,717 leaks, compared to an average year as well as adopting innovative technology such as the use of satellite imagery. This enabled it to beat its leakage target for the 17th year in a row.[219]

A2.24 **Planning for outperformance.** While companies at least aim for their performance commitment levels, in many cases they plan to do better in response to the ODI financial incentives we have set and to benefit their reputations. The three listed companies' recent statements on the possibility of aggregate ODI outperformance rewards for this AMP bear this out.[220] Therefore, rather than the distribution of outcomes being centred on companies meeting their PCLs, it should be centred on what companies plan to deliver, which may be higher (they may incur some additional expense but this will be compensated for by ODI outperformance payments).

A2.25 This means the impact of a negative event is to reduce the extent of outperformance, rather than incur underperformance payments. This reduces the skew in the outperformance payments – only if the negative impact is severe enough to move the company's performance from its targeted position above the PCL to below the PCL are underperformance payments incurred.

A2.26 For example, Wessex Water had a step change in the level of water supply interruptions following a review and a change in focus. In March 2020, it had two large incidents which increased the average annual supply interruption by more than 50% from that which would otherwise have been reported in 2019-20.[221] As it was planning for outperformance this led to a reduced level of outperformance rather than underperformance.

A2.27 Moreover, companies targeting performance above the PCL will earn positive returns from achieving these levels (as well as the positive rewards from other sources of outperformance in costs and financing – see section 3). Thus to the extent that they do incur some underperformance payments, this may simply reduce the extent of those positive returns.

A2.28 **Improving resilience.** Water regulation has encouraged companies to focus on the long term and improve service to customers since privatisation. In the 2009 price review there was an increased focus on resilience, which was

[219] South East Water, Annual performance summary and corporate social responsibility report 2018/19, p. 63.
[220] For example p14 of the transcript of Severn Trent's 2019-20 results, p20 of Pennon 2019-20 presentation, p15 of United Utilities Final Determination 2020-25 Investor Summary and 7:25 to 7:50 of United Utilities acceptance of final determination and dividend policy update audio.
[221] Wessex Water, Annual Performance Report 2019-20, July 2020, p. 49.

renewed at PR14 and became one of the four key themes of PR19. The investment in infrastructure over the last thirty years means that companies are better able to manage the risks of poor performance which can be caused by exogenous factors such as weather. While increasing resilience can improve performance in general, it is most likely to reduce the impact of low probability high consequence events. What may have had severe consequences in the past will have more minor consequences now and into the future. This means that the exogenous events which might require management action, or might impact on the plans for outperformance, will be less likely or less severe.

A2.29 For example, in June 2019 nearly two months' worth of rain fell in two days in Lincolnshire. Wainfleet was particularly badly affected, with nearly 600 homes evacuated due to the River Steeping bursting its banks into the town. The breach in the river bank inundated Anglian Water's water recycling centre and network. However, it saw the benefit of previous investment, collaboration and resilience planning and despite the extreme nature of the flooding in Wainfleet, it did not lead to significant issues for water and sewerage services.[222] Anglian Water also continues to invest in measures such as non-return valves and flood doors, which can reduce the risk of flooding to individual properties and are more cost-effective than large-scale engineering schemes.[223] The benefits of the continuing increases in resilience will be realised for years to come.

A2.30 Overall the impact of management action to prevent failures, planning for outperformance, facilitated by increases in resilience, will impact the overall probability distribution of a performance commitment to make significant underperformance less likely and significant outperformance more likely. This increases mean average performance, offsetting the asymmetric nature of the ODI rewards.

2015-20 evidence shows distribution of performance against PCLs leads to positive expected returns

A2.31 We now have evidence of performance against PR14 performance commitments for the whole 2015-20 period. This provides empirical evidence of the distribution of performance in the 2015-20 period that was not available for the CMA's provisional findings.

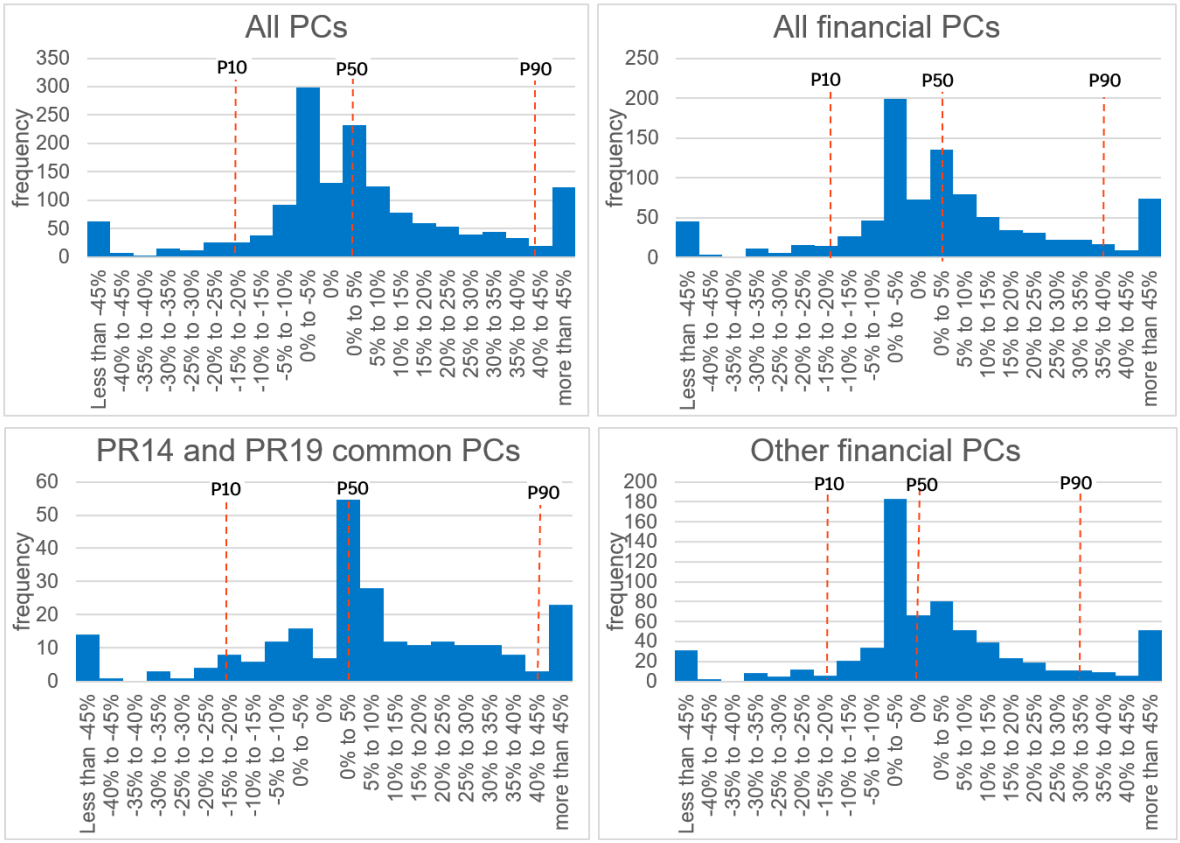
[222] Anglian Water, Anglian Water Services Limited Annual Integrated Report 2020, July 2020, p. 81.
[223] Anglian Water, Anglian Water Services Limited Annual Integrated Report 2019, July 2019, p. 37.

A2.32 We have considered the percentage difference between outturn performance and the PR14 PCL for each year. We have only taken into account performance commitments that can be one of a range of non-zero numerical values (so we exclude, for example, some scheme specific PCs and other pass/fail PCs). We report all outperformance with a positive sign (even where this corresponds to a reduction of the PC for example in the case of leakage). We report underperformance with a negative sign. As we include all performance from the 2015-20 period, this necessarily includes examples of inefficient company behaviour (such as the examples given in paragraph A2.18 above). This will pull the average performance down and so the dataset will underestimate the performance of efficient companies.

A2.33 The results are shown in figure A2.2. It shows results for all performance commitments and for financial performance commitments alone. Financial performance commitments are further split between into those that were common PCs at both PR14 and PR19 (leakage, water supply interruptions, internal sewer flooding and pollution incidents) and other financial performance commitments. To clearly distinguish outperformance and underperformance, we have a separate category for data points where companies report zero, i.e. meeting the PCL.

A2.34 On each chart, we have indicated where the P50 (the median) that splits the distribution in two lies, as well as the P10 and P90. For each of these distributions of different categories of PR14 performance commitments there is asymmetry, with a lower likelihood of significant underperformance than significant outperformance and increased likelihood of minor underperformance than minor outperformance.

Figure A2.2 Distributions of performance in 2015-20 as a percentage difference of the PR14 PCL (numerical performance commitments)



A2.35 In table A2.1, we show directly in each case the mean average is above the P50 demonstrating a positive skew. As table A2.1 shows, the median level of performance, P50, was roughly equal to the PCL for financial PCs, apart from the common PCs for which we applied an upper quartile challenge at PR14. As we have stated before the challenge applied to common PCLs at PR14 was not sufficiently stretching. Consequently, we applied a more challenging forward looking upper quartile approach at PR19. If we retrospectively correct for this by increasing the stretch of all these common PCLs by the same proportion so that the P50 is equal to 0%, the expected return would still be positive as shown in table A2.1. We present the mean of observations between P10 and P90,[224] which indicates the expected value of the

[224] We only take the mean average of values between P10 and P90 both because the dataset contains some extreme values and extreme values are generally excluded by caps and collars. For instance Bristol Water's performance for the average water supply interruption in 2017-18 was over one hour worse than the PCL, but it had a collar at less than two minutes worse than the PCL and so the majority of this did not impact the ODI payment. In the 2020-25 period the collar is set wider, up to 19 minutes worse than the PCL, but even this would significantly limit the impact of the extent of the underperformance that occurred in PR14.

performance. In each case the mean average is positive and greater than the median.

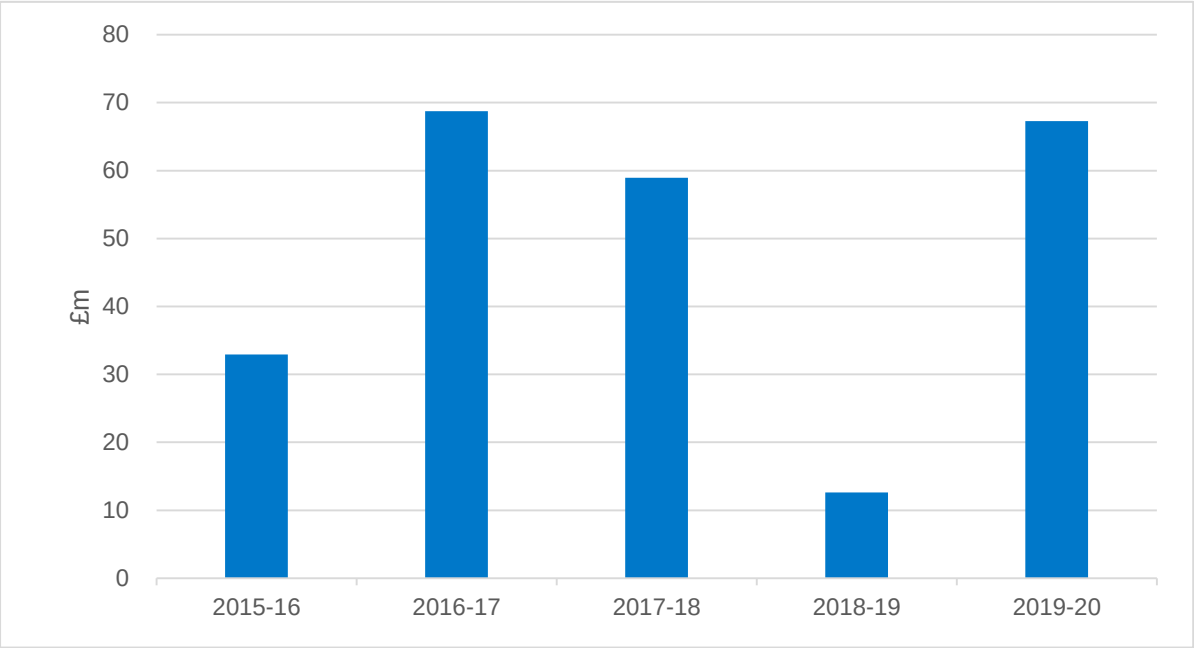
Table A2.1 Selected descriptive statistics for PR14 performance commitments over 2015-20.

Percentile	Common PCs	Common PCs (adjusted)	Other Financial PCs	All Financial PCs	All PCs
90	42.1%	41.0%	33.3%	36.6%	38.3%
80	27.3%	24.2%	14.6%	19.2%	21.0%
70	17.0%	14.1%	6.7%	8.7%	9.9%
60	8.7%	5.4%	0.9%	3.5%	4.2%
50 (median)	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**
40	1.9%	-2.3%	-0.04%	0.0%	0.0%
30	0.3%	-3.6%	-2.1%	-1.5%	-1.5%
20	-4.9%	-9.9%	-4.4%	-4.5%	-4.4%
10	-18.6%	-22.8%	-14.9%	-16.0%	-14.8%
Observations	246	246	668	914	1,513
Mean average of observations between P10 and P90 levels	**8.4%**	**4.7%**	**2.9%**	**4.5%**	**5.2%**

A2.36 In the 2015-2020 period, at an industry level there was net outperformance payments each year despite underperformance ODI rates that were on average greater than outperformance rates. This is shown in figure A2.3. [225] We have excluded three underperformance payments. The first two relate to behaviour which fell well below that of efficient water companies, and resulted in enforcement action. The third related to a cancellation of a large scheme. To the extent that this data contains further examples of inefficient behaviour or scheme specific claw backs, it will further underestimate the net rewards available to an efficient company.

[225] This excludes the Service Incentive Mechanism (SIM) which had out/underperformance adjustments equivalent to +6% to -12% of retail revenue in the 2015-20 period. This been replaced by the Customer Measure of Experience Mechanism (C-MeX) at PR19, with scope for symmetrical maximum and minimum performance adjustments equivalent to +12% to -12% of retail revenue. A further factor that should improve expected returns in the 2020-25 period.

Figure A2.3 Industry ODI totals 2015-20 (£m)[226]



Note: Values are in 2012-13 prices. This excludes a £15 million underperformance ODI payment that was incorporated into enforcement action against Southern Water.[227] It also excludes Thames Water's performance on leakage, which led to enforcement action in response to it to failing to meet its statutory obligations. Thames Water incurred underperformance ODI payments on leakage of £63 million.[228] In addition, it made £130 million of underperformance payments in response to the non-delivery of a scheme specific ODI for Counters Creek where it did not deliver a strategic sewer.[229]

A2.37 In conclusion, we do not expect net underperformance in ODI rates in 2020-25. Indeed, outperformance should be greater to the extent there is reduced asymmetry in the PR19 ODI structures compared to the previous period as set out in table A2.2. This shows that for each of the disputing companies there are either fewer underperformance-only ODIs and/or fewer ODIs where the underperformance rate is greater than the outperformance rate. Therefore, if the shape of the distribution of performance in the 2020-25 period is similar to the 2015-20 period, it is reasonable to expect overall non-negative returns across the industry given the reduction in ODI asymmetry. Moreover, resilience spend in PR14 should decrease downside risk, acting to further improve expected net ODI payments in PR19.

[226] The values quoted and in figure A2.3 are consistent with our draft consultation on the blind year reconciliation and may change as a result of consultation responses. Industry outperformance was 0.2% of RoRE over the 2015-20 period based on a weighted average of companies ODI net payments. A simple average of companies' outperformance in RoRE terms is positive but close to zero as larger companies have tended to outperform and smaller companies underperform.
[227] Ofwat, Ofwat's final decision to impose a financial penalty on Southern Water Services Limited, October 2019, p.32. Note £16.8 million in 2017-18 prices is £15 million in 2012-13 prices.
[228] Ofwat, Notice of Ofwat's imposition of a financial penalty on Thames Water Utilities Limited, August 2018.
[229] Ofwat, PR19 final determinations Thames Water – Accounting for past delivery additional information, p.16.

Table A2.2 Comparison of ODI rates between PR14 and PR19

	Percentage of ODIs that are underperformance only		Percentage of 'out and under' ODIs where the underperformance exceeds the outperformance rate	
	PR14	**PR19**	**PR14**	**PR19**
ANH	48%	42%	36%	58%
BRL	44%	40%	100%	67%
NES	33%	39%	71%	60%
YKY	31%	31%	78%	35%
Industry	**48%**	**40%**	**53%**	**54%**

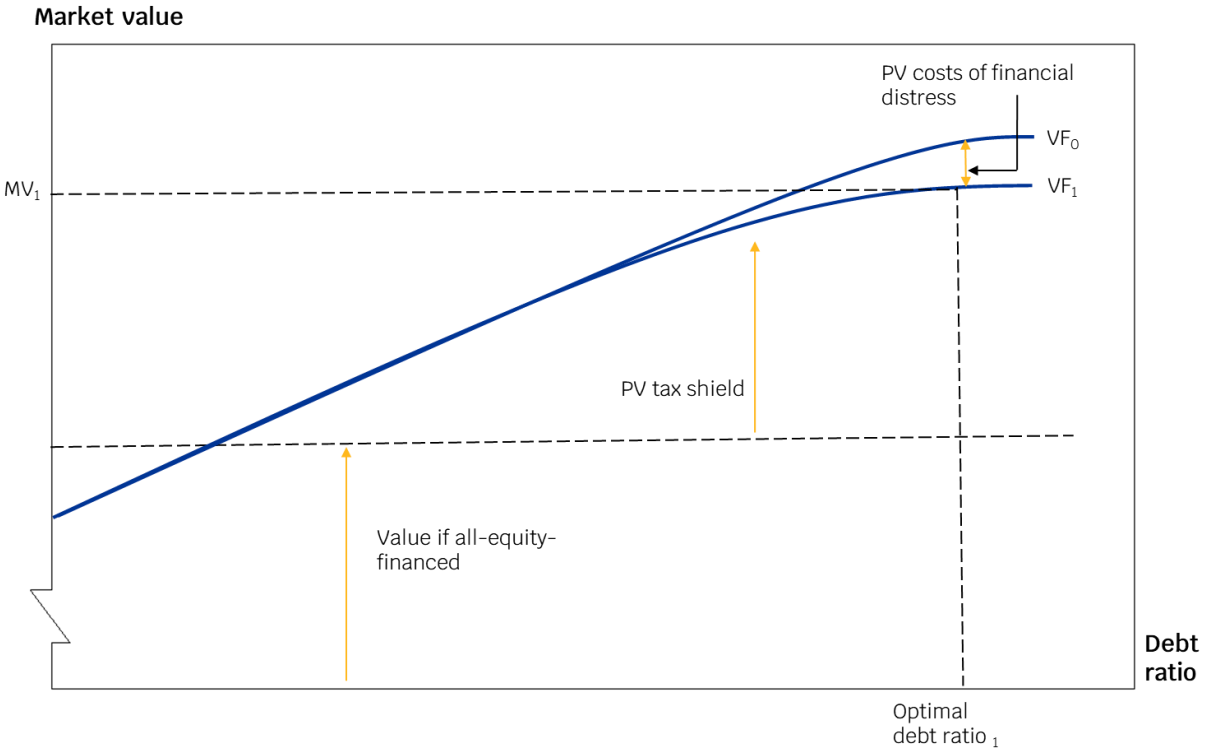
A3 Relevance of the Modigliani-Miller theorem to the gearing mechanism

A3.1 Brealey, Myers and Allen demonstrate how financial distress, even if it does not lead to administration, can impact the optimal choice of gearing and the value of the firm.[230] As the firm gears up, the probability and cost of financial distress rises. This is because the firm has committed to paying out more of its profits, so when there is an economic downturn it has less ability to cope with cash flow variations. Having greater financial commitments also increases the cost of remedying financial distress. When borrowing through debt finance firms also benefit from a tax shield. A firm's market value is determined by a trade-off between tax benefits and the costs of financial distress.

A3.2 The figure below shows how in the general case, the presence of costs of financial distress and administration reduce the value of the firm and reduces the incentive to increase gearing. As debt levels rise, the cost of financial distress becomes more prevalent as firms have greater financial obligations. This is represented in a rotation of the value of the firm curve from VF_0 to VF_1. This has two effects: it reduces the value of the firm, and it lowers the optimal level of gearing.

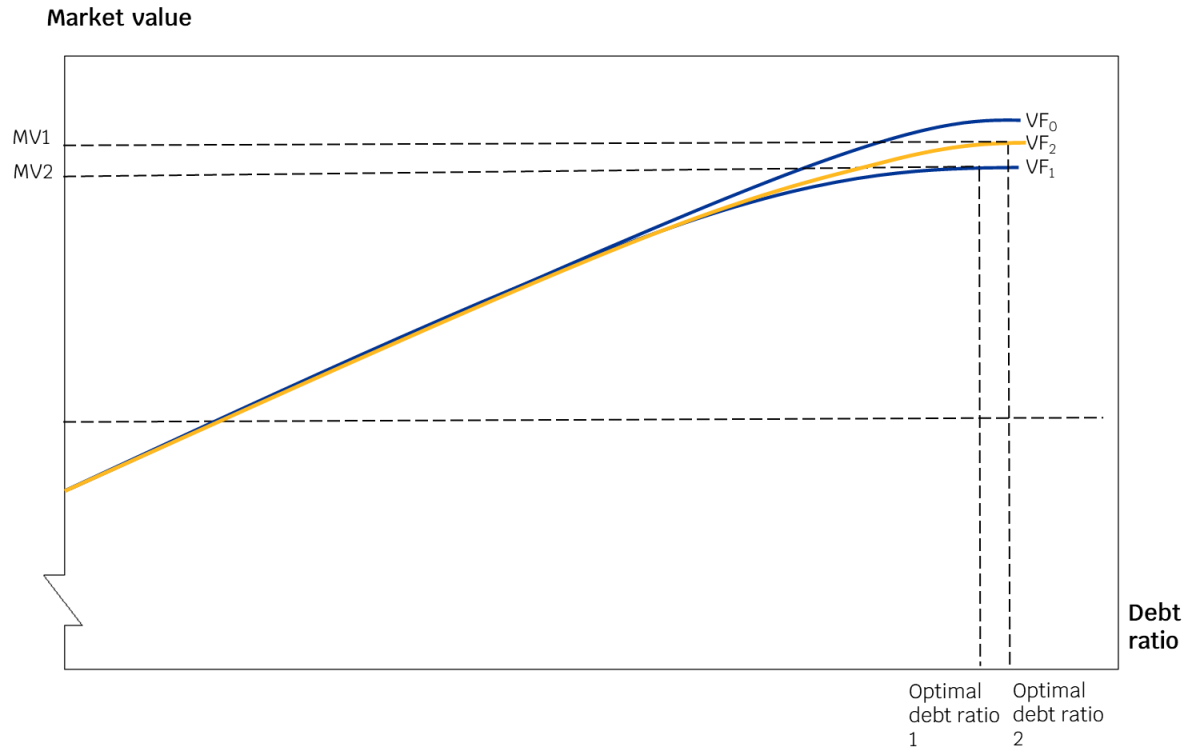
[230] 'Principles of Corporate Finance', Tenth Edition, Richard Brealey, Stewart Myers, and Franklin Allen, McGraw-Hill, page 447

Figure A3.1 – Link between Market Value and Financial Distress



A3.3 In the water sector the situation is somewhat different. The presence of the regulator and of the special administration regime provides firms with an expectation that they will not incur the full costs of financial distress or administration. This effect is depicted in in Figure A3.2 by the rotation of the value-of-the-firm curve from VF1 to VF2. Effectively there is a transfer of risk from investors to customers and so the financial cost of distress faced by equity holders is lower than it would be in a general market setting. This transfer of risk increases the market value of the firm as investors factor this into the price of securities. It also incentivises higher gearing than would arise if investors faced the full costs of financial distress.

Figure A3.2 – Impact of regulatory controls on company value and optimal gearing



A3.4 The question of whether the Modigliani-Miller theorem holds in the case of implicit guarantees has been explored in the literature. Aboura and Lepinette[231] find that the banking sector breaks Modigliani-Miller theorem which does not take into account government interventions. The implicit guarantee given to banks reduces the cost of bankruptcy for private firms, but not for customers. We consider this also holds true for water sector where customers face disruption to service and higher bills in the event of failure.

A3.5 Our view that water companies are not indifferent between levels of gearing is supported by Anglian Water and observed in the literature. Anglian Water references 'trade-off' theory where they state that 'a firm's financial structure results from a trade-off between tax benefits derived from gearing up and costs of financial distress associated with higher debt. According to this theory, firms with safe and tangible assets will tend to gear up as their debt is backed up by safer assets'.[232] Bortolotti et al's study of the capital structure of utilities found higher levels of leverage in the companies that were privately owned and regulated[233]. The existence of the special administration regime

[231] Aboura, S. and Lepinette, E., 2015. Do banks satisfy Modigliani-Miller Theorem? SSRN Electronic Journal.
[232] Anglian Water, 'Statement of Case', April 2020, p. 326, paragraph 1372.
[233] Bortolotti, B., Cambini, C., Rondi, L. and Spiegel, Y., 2011. Capital Structure and Regulation: Do Ownership and Regulatory Independence Matter? Journal of Economics & Management Strategy, 20(2), pp.517-564.

and regulation in the water sector means that companies do not face the trade-off they otherwise would. By gearing up, water companies are able to engage in a one-sided bet where investors make a return if companies outperform but are not liable for the costs of failure.

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.

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