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Dear Mr Meek

Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Provisional Findings

Introduction

1. Thank you for the opportunity to respond to the CMA's Provisional Findings ("PFs") in the above price determinations. Ofgem previously responded to the call for submissions from third parties in our letter of 11 May 2020¹ and attended a hearing with the CMA on 3 June 2020.
2. We appreciate that the setting of a price control is a complex and multi-stranded process and recognise that the relevant statutory timeframe places limits within which the CMA has to consider these references.
3. We also recognise that the CMA's statutory role in references in the water sector requires it to carry out a de novo assessment; the PFs provide as follows:²

When a reference is made to the CMA by Ofwat (on request of a water company) for a redetermination of Ofwat's price control, the CMA is to decide the matter on its own merits in accordance with the statutory duties that apply to Ofwat...

In carrying out these redeterminations, the CMA will be exercising its own regulatory discretion as to how to appropriately balance these statutory duties. As the CMA is making a fresh determination, the CMA considers that it should, in principle, consider any further issues that have arisen since Ofwat made the disputed determinations.

4. We note that this is materially different to the CMA's role in energy licence modification appeals, which was described by the CMA in the RIIO-ED1 price control appeals as follows:³

¹ https://assets.publishing.service.gov.uk/media/5ebdbdc1e90e071e2a937fce/Ofgem_Redacted.pdf

² CMA PFs. paras 2.65 – 2.66

³ Paras 3.36 – 3.37, British Gas Trading Limited v The Gas and Electricity Markets Authority - Final determination

We do not consider that an appeal under EA89 involves a rehearing where it is open to us to decide matters afresh untrammelled by GEMA's decision...

Nor do we consider that we were required in the present context to have conducted a re-run of GEMA's original decision-making process or to have held a de novo rehearing of all the evidence. The CMA must limit its consideration to the specific grounds of appeal set out in EA89, to the extent that such grounds are raised by the appellants...

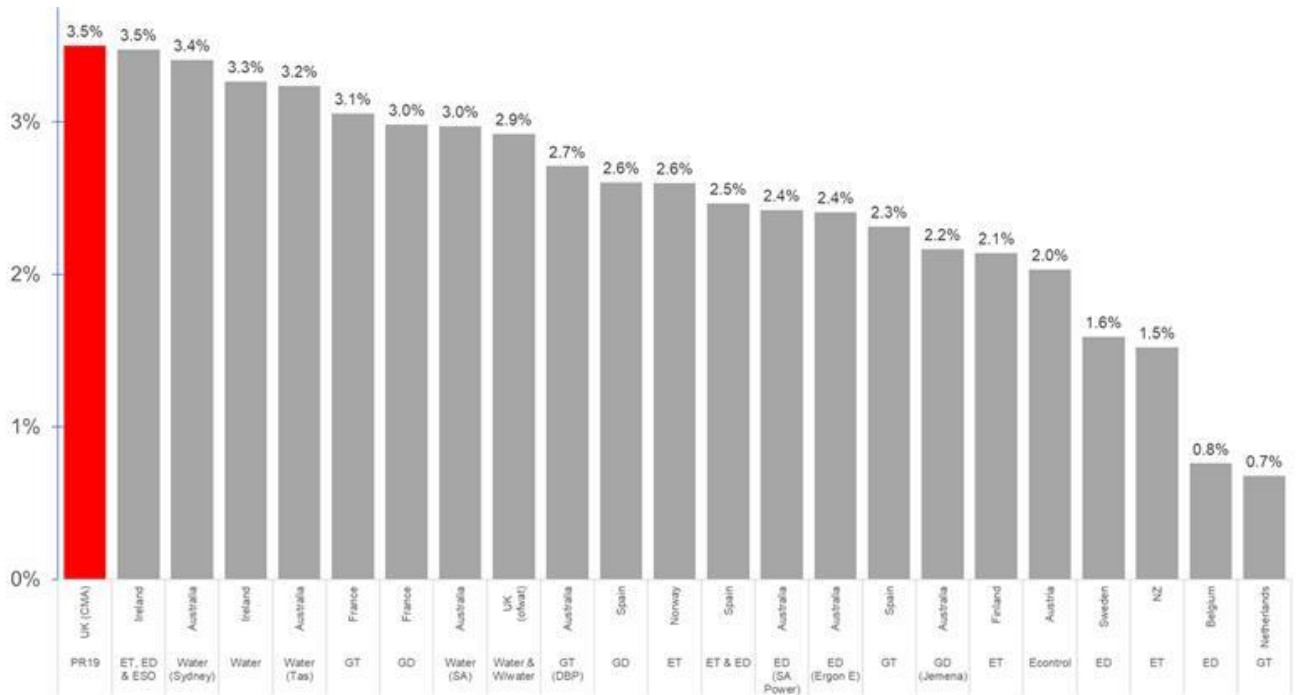
5. Notwithstanding those differences, we are concerned that certain findings made in this re-determination process, as currently expressed, may be relied upon by our stakeholders to attempt to influence or challenge the RIIO-2 regulatory process. We have concerns, in particular, that the Panel's decision to find in water companies' favour in its estimation of cost of capital parameters, and subsequently to aim up on the cost of equity, could be perceived as altering the balance of risk and return in UK regulated sectors, in favour of investors, to a level beyond what is reasonable based on market evidence. The result is likely to be a substantial transfer of value from consumers to investors in the water sector, without clear benefits in terms of deliverable outputs and standards of service.
6. We are therefore keen to ensure that the CMA's findings in this price determination are not treated as making broader assessments beyond the present and specific context of PR19 in the water sector, particularly in circumstances where subsequent regulatory decisions could end up being the subject of consideration by the CMA in future.
7. We recognise, as no doubt the Panel does, that there are important differences between the water and the energy sectors. However, differences in outcome in the regulatory process may result not only from differences in the industries in question but also by reason of the fact that different regulatory judgments may be made in relation to similar issues. Whilst it is, of course, for this CMA Panel to frame the terms of its findings as it see fit, Ofgem considers it would be of assistance to all regulated industries (and their regulators) if it were able to emphasise clearly in its final decision that (a) the decisions and judgments in this case concern its particular statutory role in relation to water and focus only on the water industry; and that (b) the nature of the decisions and judgements it is making here pursuant to its particular statutory role are of the sort which other regulators might reasonably reach differently where these are a reasonable and logical reflection of the evidence and circumstances pertaining to those sectors.
8. Ofgem is nevertheless keen to assist the Panel by setting out certain observations (under the following headings) about the approaches set out in the PFs. We are keen that the Panel's final determinations' methodology and use of data are robust and appropriately consistent with previous decisions and broader good practice. We would also ask the Panel to take into account the potential broader impact its decisions could have on future regulatory predictability and certainty.

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WACC allowance overall

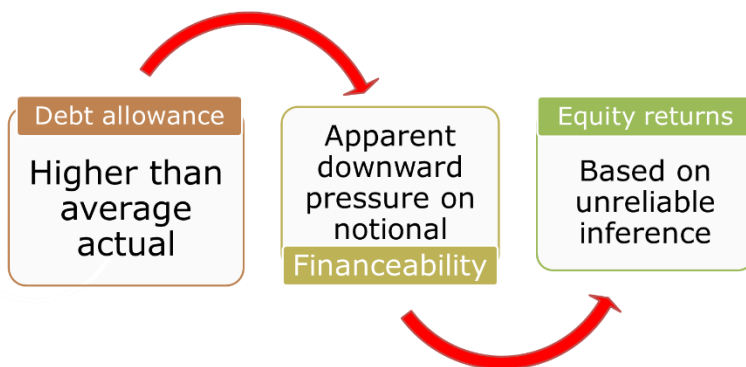
- 9. We recognise that the CMA’s consideration of the WACC and finance-related issues raised by the appellants involved undertaking a significant amount of work within a short timeframe covering the early months of the Covid-19 outbreak.
- 10. However, our view is that the CMA’s PFs, if maintained at Final Determinations, would provide the relevant disputing water companies with return allowances that are out of line with market comparators and international returns, risking legitimacy and market distortion. Figure 1 provides a comparison of recent relevant international returns.

Figure 1: allowed returns on capital – recent proposals and decisions internationally



- 11. We set out our view on individual elements in the following sections but overall, it appears that an error in the calculation of the debt allowance in the PFs may have led to inaccurate inferences being drawn in other areas, as depicted in Figure 2:

Figure 2: A cause and effect interpretation of CMA’s PR19 PFs



Cost of Debt

12. We note that the PFs base the cost of debt allowance purely on external iBoxx indices and that the CMA has assessed a range for embedded debt based on a 20-year trailing average of unadjusted iBoxx yields (giving a range of 2.76-3.15%). We note, and have sympathy with, the CMA's point that it wishes to avoid:

*"...the need for complex analysis of individual debt instruments to assess whether they were issued 'efficiently' (a process that impossible for the CMA to conduct within the redetermination timeframe)."*⁴

13. However, if customers were to pay more than average actual debt costs, this implies a subsidy to equity returns which means they will exceed the estimated cost of equity.
14. We consider it important that this actual data is considered because getting this wrong could be extremely costly to either water consumers or to regulated companies. We also note that Ofwat considered evidence from both a benchmark approach and a 'balance sheet' approach, which analysed granular company data on debt issuance to calculate sector weighted average and median values.⁵
15. We have sympathy with the CMA's time and resource constraints for the PFs. However, we are of the view that disregarding the work Ofwat has done on its "balance sheet approach" (as a cross check to its more conceptual benchmark approach) means that the debt allowance proposed in the PFs is materially above a fair and reasonable estimate of the cost of debt likely to be incurred by a notional efficient operator in the water sector.
16. One of the benefits of setting the cost of debt on a notional basis (rather than passing individual company debt costs through directly to consumers) is the incentive properties for companies to raise the most cost-effective finance, such that consumers can benefit from any contracted lower cost embedded finance in subsequent price controls. It is therefore important to consider actual embedded debt costs when calibrating the index or setting an allowance for embedded debt. If indexation mechanics are not adjusted over time, then customers would never share in financing efficiencies. Therefore, we agree with Ofwat that it is both appropriate and necessary to consider actual average debt costs when calibrating allowances.
17. In the absence of reconsidering this detailed work and/or the detail of water sector data submissions, as a minimum we would invite the Panel to ensure that a benchmark approach is adjusted to capture at least the following material points:
- a) RAV and therefore debt book growth - as these have been growing over time in the water sector, a trailing average that is not calibrated or weighted appropriately would not be accurate.

⁴ CMA PF. Para 9.342 (b), p. 591

⁵ <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Allowed-return-on-capital-technical-appendix.pdf>, p. 85.

- b) European Investment Bank (EIB) funding - water companies have benefitted from a large amount of UK taxpayer subsidised EIB loans (which have been provided at below commercial market rates because it is a non-profit maximising supranational that is funded by contributions from member countries).
 - c) Floating rate debt - water companies have issued some floating rate debt, so applying a historical fixed rate to the entire debt book does not capture the fact that a proportion of debt is currently attracting much lower rates of interest.
18. This adjusted benchmark approach could then be compared to reported average actual water sector debt costs to determine whether it is likely to provide a reasonable allowance. Errors that arise in the cost of debt allowance setting are important to consider first because it is relevant to the CMA's WACC financeability cross-check described in the PFs.⁶ If unaddressed, it will lead to unrealistic apparent pressure on notional credit metrics, which may lead to erroneous inferences in other areas.

Cost of Equity

Risk-Free Rate ("RFR")

19. The CMA assesses that Index-Linked Gilts ("ILGs") imperfectly match the requirements of the RFR within the CAPM model.⁷ The PFs note Oxera's arguments as to why the ILG might have a so-called 'convenience yield' below its presumed correct yield, which will be unobservable, and so argue that the government can borrow at rates substantially lower than "*even higher-rated non-government market participants*".⁸ Following Oxera, it suggests that an index of AAA-rated corporate bonds would be an alternative measure of the RFR. It takes the average of the IHS iBoxx £ Non-Gilt AAA 10+ and 10-15 year indices as the upper bound of its range for the RFR. This gives a range of -1.40 per cent to -0.81 per cent.⁹ It then chooses a point estimate of -0.96 per cent.
20. We do not consider it appropriate to distinguish between lending and borrowing rates for CAPM without also considering whether marginal investors in regulated utility companies are net lenders or net borrowers. Our analysis of the investors in the four appellant water companies is that they are institutional investors, investing on behalf of pension funds and other long-term investors. Assuming these institutions represent the marginal investor, they are therefore effectively lenders for whom the ILG rate is the most appropriate RFR. Notwithstanding this position, we have the following specific concerns in relation to this proposal.
21. We believe the use of the AAA non-gilt bond index risks introducing new inaccuracies in an attempt to correct the factors that Oxera suggests may make the market yield of the 20-year ILG too low (but admits by how much is unquantifiable). As a general

⁶ CMA PFs. Para 9.670, Para 9.673 and Para 9.674.

⁷ CMA PFs. Para 9.135

⁸ Ibid

⁹ Table 9-2 p. 534

point, we would expect these AAA non-gilt bonds to be quite illiquid and contain some element of default risk. These factors can contribute towards higher yields, more so than ILG being depressed by a convenience yield.

22. The non-gilt bonds which constitute the AAA non-gilt 10-15 year index are also in the 10 year+ index.¹⁰ So, combining the 2 indices appears to us to be double counting, compounding potential reliability issues with those data points.
23. Certain of the bonds seem to us to be so specialised that using them as a measure of RFR seems problematic. In particular we would note: the Broadgate Financing bond (due 2033, 2.33% of the AAA 10+ year index and 6.74% of the AAA 10-15yr index), which is a commercial property securitisation and although rated 'AAA' has a 'structured finance' suffix to the rating which means it trades with a significant complexity premium compared to a 'natural' AAA; the Oxford University bond (due 2117, 6.3% of the AAA 10+ index); and the Wellcome Trust bond (due 2118, 4.9% of the AAA 10+ index). The latter two bonds are of 100-year maturity and, we suggest, are likely to be highly illiquid.
24. We also consider that using nominal bonds risks introducing further errors. Nominal bonds will have an inflation risk premium embedded in their yield, leading to a higher yield than an equivalent inflation linked bond, which is otherwise identical as to yield and tenor, would have. Given the uncertainties of investment over such a long time period, we believe that nominal bonds, including the ones used in the index given their long-term nature, will have an inflation risk premium.
25. Table 1 provides possible alternatives or cross checks for the RFR including: the 20-year ILG; the SONIA 20-year swap rate; the AAA non-gilt yield; and the 20-year Nominal Gilt. For comparability, we inflate the 20-year ILG by the 0.9% assumed by the CMA in PFs¹¹ and deflate nominal rates to CPIH real by the 2% assumed by the CMA in PFs.

¹⁰ Index compositions available on request

¹¹ CMA PFs, para 9.139

Table 1: 180 record average for potential 'risk free rates' (to end July 2020 as per CMA PF)

	Nominal	RPI real	CPIH real
20yr ILG		-2.28%	-1.40%
20yr nominal gilt	0.91%		-1.07%
20yr SONIA swap	0.45%		-1.52%
Non-gilt AAA indices ¹²	1.17%		-0.81%

26. SONIA is the Bank of England's preferred measure of risk-free interest rates.¹³ A 20yr SONIA swap rate would provide a maturity equivalent rate to those being considered by the CMA. We therefore include it as a potential measure of nominal risk-free rates. By contrast, the AAA non-gilt IHS iBoxx index yield is not a risk-free commercial rate (as the CMA notes in paragraph 9.90).
27. Overall, Table 1 suggests that the choice of the AAA non-gilt bond index yield biases upwards the range for RFR proposed by the CMA.
28. The use of the AAA non-gilt IHS iBoxx index yields for the Risk-Free Rate would be a departure from past regulatory practice in water and the overwhelming majority of academic, practitioner and reference based finance textbooks.¹⁴ We agree with Ofwat that making any such departure ought to be subject to wider consultation on the merits of taking such a position.

Total Market Return ("TMR")

Initial comments

29. After considering ex-post, ex-ante and forward-looking approaches, the CMA arrives at a proposed TMR range of 5.25% to 6.25%, which it refers to as 'RPI-real', or 6.20% to 7.21%, which it refers to as 'CPIH real'.
30. By contrast, in its NATS decision, the CMA estimated a range for TMR of 5.0% to 6.0% (RPI-real) or 6.0% to 7.0% (CPIH-real).
31. In the PFs, the CMA explains:

¹² CMA PFs, para 9.140(b)

¹³ <https://www.bankofengland.co.uk/markets/transition-to-sterling-risk-free-rates-from-libor>. https://www.fsb.org/wp-content/uploads/r_140722.pdf p. 9 specifically mentions use of SONIA & LIBOR in CAPM.

¹⁴ See for example: Armitage, S. **The Cost of Capital Intermediate Theory**. Cambridge UP. 2005. Ch 13.1 p. 278. Koller, T. Goedhart, M. Wessels, D. **Valuation Measuring and Managing the Value of Companies**. John Wiley & Sons. 2010. pp. 236-238. Brealey, R. Myers, S. **Principles of Corporate Finance**. 7th Ed. 2003. McGraw-Hill. pp. 192-194.

*"This range [5.25% to 6.25%] is **slightly above** the 5-6% range used by the CMA in its recent CAA/NATS decision, which reflects the further evidence and reasoning provided by parties to the CMA regarding the uncertainty over the accuracy of the available inflation data series. In particular, in these provisional findings, we have chosen not to make specific adjustments to the RPI-deflated figures to reflect the change in the formula effect in 2010, albeit we continue to place less weight on the upper end of the RPI-deflated range."*¹⁵ [**emphasis added**]

32. To support the CMA in its Final Determinations, we draw attention to the following:
- Little weight, if any, appears to be placed on ex-ante or forward-looking approaches by the CMA, which suggests an unduly narrow focus.
 - The proposed range is heavily influenced by the CMA's view on the relevance of the formula effect in RPI, which differs from its view on the same issue in the NATS appeal. Even if this formula effect evidence is accepted, which we consider it should not be, the CMA's PR19 PFs have increased by much more than necessary. For example, the CED/CPI evidence presented by the CMA is unchanged by the formula effect debate. Indeed, the CMA's provisional finding casts doubt on whether any weight is placed on ex-post CED/CPI at all, which, in our view, is surprising given that CPI is the agreed reference point going forward.
 - In the NATS appeal, the average of the CMA's three estimation methods, ex-post, ex-ante and forward-looking, aligns with the range proposed by the CMA in the NATS provisional findings, 5% to 6%. In contrast, in the PR19 PFs, the average of the CMA's three methods, 5.1% to 6.1%, is out of line with the CMA's proposed range for PR19, 5.25% to 6.25%.
 - There are other ways to avoid the inflation issues facing the CMA, which we agree are complex, such as the use of USD based returns.
33. The primary issue facing the CMA is how to estimate real returns given the complex history, and future, of inflation measurement. In the following paragraphs, we attempt to highlight for the CMA an alternative interpretation of its own analysis. This will, we believe, help the CMA weight its own analysis in its final decision for PR19.

¹⁵ CMA PFs. Para 9.221 p. 557

34. The CMA's Table 9-3, re-presented below, shows the CMA's estimate of outturn real returns (arithmetic, geometric, overlapping and non-overlapping).

Table 9-3: CMA estimates of real returns, 1900 to 2019

	<i>Holding period</i>	<i>Inflation series</i>	
		<i>CED/CPI</i>	<i>CED/RPI</i>
Arithmetic mean	1 year	7.0%	6.7%
Geometric mean	120 years	5.2%	5.0%
	10 years	6.8%	6.6%
Blume (1974)	20 years	6.7%	6.4%
JKM (2005) unbiased estimator	10 years	6.9%	6.6%
	20 years	6.7%	6.5%
	10 years	6.6%	6.3%
JKM (2005) MSE	20 years	6.1%	5.9%
	10 years	6.6%	6.4%
Overlapping	20 years	6.7%	6.4%
	10 years	6.8%	6.5%
Non-overlapping	20 years	7.2%	6.8%

Source: CMA analysis

Note: With a holding period of 10 years, the non-overlapping average comprises 12 observations, which reduces to 6 observations for a holding period of 20 years. Due to the small sample size, we have put less weight on these results.

35. The question facing the CMA is how it should interpret this table, particularly given its stated view that the most robust approach to estimate TMR is to use historical ex-post returns.¹⁶
36. To further consider the CMA's approach, we consider an example where the difference between RPI and CPI/H is much larger than the normal assumption of +1% or +0.9%, say +4%, for illustration. In this hypothetical world, RPI expectations are, say, 6%, whereas CPI/H expectations remain around 2%. Now, the CMA would, based on the approach taken in the PR19 PFs, adjust the CED/CPI column downwards by 4%, or adjust the CED/RPI column upwards by 4%. This would leave the second row reading:
- 1.2% to 5.0% on an 'RPI' basis, or
 - 5.2% to 9% on a 'CPI/H' basis.¹⁷
37. Whilst extreme, this example serves a useful purpose. It reminds us that we must have a clear view on inflation expectations, including whether we believe RPI or CPI/H to be the best measure going forward, in terms of setting expectations. This clear view is a pre-requisite to estimating the real TMR.
38. By contrast, the CMA does not appear to have taken an explicit view on whether RPI or CPI/H is the best ex-ante measure, relying instead on the wedge to infer what real returns should be. This results in an RPI-CPI/H "wedge-sized-gap" in the CMA's evidence base.¹⁸ Under the CMA's methodology, inferred real returns will move up

¹⁶ CMA PFs. Para 9.216

¹⁷ For simplicity purposes only, we remain in geometric terms, and thus exclude the +1.2% which the CMA include, as per footnote 1406 on page 549 of CMA's PR19 PFs.

and down with the forecast RPI-CPI/H wedge. An alternative is to use a reliable and credible measure of inflation, such as CPI or CPIH going forward and the best available measures looking backwards, whether that be CED, RPI, CPI, CPIH or some other measure. This avoids RPI complications and is more in line with the Johnson Report¹⁹ (2015) and the proposed approach by HM Treasury²⁰, to move away from RPI going forward. By using the RPI-CPI/H wedge, the CMA has embedded ex-ante RPI evidence going forward, which we consider is not consistent with best practice.

39. We also suggest that the CMA considers US dollar returns as a cross-check on its estimates of TMR.²¹ If the marginal investor to the UK market is an international one, (whose currency of numeraire is the US dollar), and if the Purchasing Power Parity theory holds in the long run, then US dollar returns of the UK market should be a good measure of the actual returns investors achieved.²²

Debt Beta

40. The PFs conclude that the decomposition approaches used by Ofwat provided a compelling case that the regulatory model should include a positive debt beta.²³ The CMA then proposes a range of 0 to 0.15. We question the CMA's choice of a debt beta of 0.04 rather than a value closer to the mid-point. Doing so exacerbates the re-gearing impact which the CMA identifies as problematic in the NATS appeal. We address below our general concerns regarding aiming up.

Unlevered and equity Beta

41. The CMA estimates a range for unlevered beta of 0.27 to 0.32. It states that using this range would place weight on daily and weekly estimates of 2-year, 5-year and 10-year data, but less emphasis (due to the removal of outliers) on monthly data.²⁴ The CMA then chooses an unlevered beta value of 0.31.²⁵ At 60% gearing the CMA

¹⁸ We refer here to the CMA's paragraph 9.217 – the ranges in the first sentence do not overlap, because the CMA adjust for the expected wedge, as per our illustrative example, even though the ranges set out in the CMA's Table 9-3 overlap materially. It's possible to agree with the CMA that the ex-ante RPI range should differ from the CPI/H range, but to disagree that the CED/RPI results can only be interpreted in expected RPI terms. As shown by the CMA, CED/RPI is similar to CED/CPI, numerically and theoretically.

¹⁹ <https://uksa.statisticsauthority.gov.uk/reports-and-correspondence/reviews/uk-consumer-price-statistics-a-review/>

²⁰ <https://www.gov.uk/government/consultations/a-consultation-on-the-reform-to-retail-prices-index-rpi-methodology>

²¹ https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_finance_annex.pdf, Para 3.69, p. 28

²² It seems to be reasonable to us that whilst there can be long periods of deviation from PPP, even in a world of floating exchange rates, these are in time corrected and their effect on averages over such a long period would be reduced. Comparison data for UK £, UK \$ and world \$ returns available on request

²³ CMA PFs. Para 9.314, p. 584

²⁴ CMA PFs. Para 9.289, p. 577. CMA Provisional Findings. Also Table 9-15, p. 577. In checking the ranges for Cost of Equity in Table 9-24, we found we were only able to calculate the low end of the CMA's Cost of Equity with a debt beta of 0.15 was by inputting an unlevered beta of 0.261.

²⁵ CMA PFs. Table 9-26, p. 674

estimates a notional equity beta range of 0.65 to 0.80 and then, based on aiming up logic, proposes a point estimate of 0.76.

42. We believe that the CMA’s approach may have introduced a degree of upwards bias, by taking averages of different estimation windows. A 2-year period ending June 2020 is sampled 3 times - once for the 2-year window, once for the 5-year window and again for the 10-year window. If the beta estimate for the most recent 2 years is markedly different than for the previous periods, then this could lead to a bias in the beta estimate²⁶. We would ask the CMA to consider the possible benefits of focussing on a larger estimation window.

Figure 3: Unlevered beta analysis, 2-year window (top left), 5-year window (top right) and 10-year window (bottom)



43. Figure 3 closely replicates the CMA’s approach and helps to test the CMA’s assertion that it has “not tried to aim up or down when setting the individual metric estimates”.²⁷ As shown, the CMA can easily reach a much lower range and point-estimate by

²⁶ Beta analysis for UU and SVT available on request

²⁷ CMA PFs. Para 9.663

avoiding over-sampling, in particular. However, we would also ask the CMA to consider other sensitivities on its analysis, including²⁸:

- The use of market values of debt rather than book values
- The use of GARCH analysis which, unlike OLS, captures time-varying aspects

Aiming Up

Aiming Up – initial comments

44. To propose an allowed return on equity, the CMA estimates CAPM parameters (RFR, TMR, equity beta), before selecting values towards the top-end of its range.²⁹ The CMA states that “[o]ur cost of equity allowance is 0.96% higher than Ofwat’s PR19 decision. 0.50% of this difference is accounted for by “our decision to aim up to the 75th percentile on cost of equity metrics in order to recognise the higher potential for error within our cost of equity assumption”.³⁰
45. We set out below concerns we have regarding how the CMA have reached this provisional conclusion.
46. The CMA states that “[w]e are not persuaded that there is a sufficiently strong case for ‘aiming up’ solely to ensure that the firms have incentives to undertake specific new asset investments in AMP7”.³¹ The CMA then goes on to state that Ofwat and Citizens Advice identified a range of measures that should help ensure that sufficient investment takes place and that adequate levels of customer service are maintained throughout the price control.
47. Then, the CMA attempts to make a distinction between ‘continuing investment’ and ‘specific investments’. The CMA states that “[t]he broader concept of ‘promoting investment’ covers the overall willingness of investors to commit capital to the sector, and therefore to ensure that there is continuing investment in the water sector, not just in the specific investments identified in AMP7”.³²
48. The CMA may be referring to the remuneration of the opening RAV, such that sunk investments receive a premium above the underlying cost of capital/equity. On this basis, the CMA’s position in these PR19 PFs appears to contradict the position put forward by the CMA in the NATS appeal, where it stated “...given that the premium would apply to assets already in place as well as promoting new investments, it [a long-term premium on the cost of capital] might only need to be small to be

²⁸ See RIIO-2 Draft Determinations Table 14 and Table 15 for example:
https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_finance.pdf#page=45

²⁹ CMA PFs. Table 9-26, p. 674

³⁰ CMA PFs. Para 9.685

³¹ CMA PFs. Para 9.666

³² CMA PFs. Para 9.667

effective".³³ The CMA's position in the NATS appeal aligns better with observable investor appetite.

49. Alternatively, the CMA may be implying that non-specific investments during PR19 provide a logic for aiming up even though Ofwat and Citizens Advice identify measures that 'help to ensure that sufficient investment takes place'. If this helps explain the CMA's motivation, then the CMA should identify these non-specific investments, and/or consider whether alternative remedies (such as quality of service targets or licence obligations) may better serve the consumer interest, rather than aiming up on WACC allowances.
50. Further, the CMA states that "[t]here are well-established arguments that underinvestment caused by a cost of capital being set too low damages the overall welfare of consumers (and potentially the wider economy) materially more than the welfare lost through bills that may be slightly too high."³⁴ It appears that the CMA's view in this context may have been influenced by research, which in our view, cannot be uncritically relied upon. One report, often cited by 'aim up' advocates, is by Professor Ian M Dobbs.³⁵ However, Dobbs' work does not account for all relevant considerations. For example, sharing factors, Output Delivery Incentives ("ODIs"), and licence obligations, are all omitted from Dobbs' analysis, which, in our view, makes it unsuitable for the CMA's purposes with respect to PR19. Overall, we disagree that there are 'well-established' arguments or evidence for aiming up in the present context. We agree with Ofwat that investment in this sector responds more to quality of service targets and licence obligations set by the regulator, rather than being discretionary in response to market demands, such as is arguably the case in telecommunications.
51. The CMA also states that "we note that the most common decision has been that some 'aiming up' has been merited in order to promote investment in the sector, and that there may be benefits to consistency – including ensuring investor confidence in the sector."³⁶ We note the approach taken by the CMA and its predecessor, the Competition Commission ("CC") in previous appeals/re-determinations (e.g. NATS in 2020 and Bristol Water in 2015) was to 'aim straight'. Further, it is not clear from the PFs what evidence the CMA relies upon when it says the 'most common decision' has been to aim up, either within the UK or across the world.
52. The CMA states that "[w]e also consider that there are broader reasons for considering a WACC above the mid-point in this determination, relating to financeability..."³⁷ However, in previous CC/CMA appeals/re-determinations, the opposite approach was

³³ https://assets.publishing.service.gov.uk/media/5e7a2644d3bf7f52f7c871f3/Provisional_Findings_Report_-_NATS_-_CAA.pdf Para 12.289.

³⁴ CMA PFs. Para 9.667

³⁵ <https://www.staff.ncl.ac.uk/i.m.dobbs/Files/Welfare%20loss%20JRegE.pdf>

³⁶ CMA PFs. Para 9.668

³⁷ CMA PFs. Para 9.670

taken. Perhaps the best example of this comes from the CC's 2007 airport price control review:

"It would be possible to increase the returns in Q5 and hence improve financeability in various ways. We set out some options and our views on them.

*(a) By raising the allowed cost of capital. It would be possible to increase our proposed WACC in the form of a higher equity return or a higher debt return. We do not favour this as we consider that our chosen cost of capital reflects the true cost of raising funds allowing for all the systematic risk faced by the airports and to increase the cost of capital and hence the allowed return further would result in an excessive return being earned on new investment."*³⁸

53. Hence, the position taken by the CMA in the PFs appears inconsistent with its predecessor's approach to WACC allowances and financeability. We would also refer the Panel to the decisions in Mid Kent Water (2000) and Bristol Water (2010) for further consideration.
54. Overall, we believe that the question of whether there is merit in aiming up is a decision that needs to be taken having regard to the context-specific facts and circumstances of the price control in a particular sector. Here we would suggest that the CMA assess whether the underlying analysis on aiming up properly applies to PR19 and its regulatory regime. We suggest this should include considering the trade-off between incentive types (outcomes, underspending³⁹, licence enforcement) as each incentive can have different impacts on consumers depending on the sector.
55. To further support the CMA's analysis and Final Determination, we set out below two further sections on aiming up.
 - The first discusses the issue of asymmetric risk.
 - The second discusses the question of what degree of aiming could be justified analytically, using Monte Carlo analysis, setting aside the principled points about whether there are benefits to aiming up at all in a sector such as water.

Aiming up - Asymmetric Risk

56. In reaching its provisional view to consider a WACC above the mid-point of its range, the CMA has drawn, in part, on its finding that Ofwat's PR19 package for Performance Commitments ("PCs") and ODIs created asymmetric risk for the Disputing Companies.

³⁸ Competition Commission, 2007, Heathrow Airport Ltd and Gatwick Airport Ltd price control review. Final report, paragraph 5.32, page 77 (see https://webarchive.nationalarchives.gov.uk/20140402235728/http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2007/fulltext/532.pdf#page=80)

³⁹ See para 3.146 of RIIO-2 Draft Determinations. It challenges the assumption that aiming up leads to more investment. https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_finance.pdf#page=80

57. While the PFs do not appear to draw a mechanistic link between the asymmetric risk identified and the uplift applied to the WACC, it appears that the CMA has placed significant weight on its finding of asymmetric risk when provisionally deciding to aim up.
58. Although CAPM theory requires an assumption of symmetric risk exposure, in reality, we do not expect regulated companies in the UK to face perfectly symmetric risks across every aspect of their regulated activities. These companies operate under regulatory arrangements that expose them to risks and provide opportunities for rewards to varying degrees. While, in aggregate, price control packages are typically calibrated to provide companies with a fair opportunity to earn their allowed rate of return, it is possible that individual elements of the price control package are not perfectly symmetrical and may be biased upwards or downwards.
59. The CMA's analysis has found that under Ofwat's ODI package, companies would expect to suffer penalties "of the order of 0.1%-0.2% RORE". We do not comment on the validity of the CMA's analysis of Ofwat's ODIs. However, we would caution against a relatively simplistic assessment of risk that compares ODI caps against collars (where applicable) or other extreme values (e.g. P90 against P10). In general, we believe that the most relevant metric of skewness or symmetry in relation to ODIs is the expected reward/penalty (i.e. the P50 value) aggregated across the whole package. It is not clear whether the CMA has looked at expected levels of performance when reaching its provisional view that Ofwat's ODI package creates asymmetric risk.
60. We cannot identify in the reasoning any consideration being given to asymmetries that may exist in other aspects of Ofwat's PR19 price control package when reaching a provisional view on a WACC allowance, as compared to the reasoning on asymmetries arising from the ODI package.
61. We believe that the WACC allowance should take account of asymmetric risk and should be based on an "in the round" assessment of features of price control package (qualitative and quantitative) to identify any asymmetries in expected outcomes, whether they be skewed to the upside or downside. We also believe that any finding of asymmetry should be cross-checked against empirical data on past performance by companies.
62. We cannot identify this "in the round" assessment or quantification in the PFs, which, if it were undertaken, would call into question the CMA's conclusions that the Disputing Companies face asymmetric risk, thus leading CMA to "aim up" when proposing a WACC allowance. As a result, it is unclear that the CMA's provisional decision to "aim up" is in consumers' interests.

Aiming Up – Monte Carlo Analysis

63. If each of the 3 main equity parameters (RFR, TMR and equity beta) are in fact randomly distributed, then the chosen midpoint will not be the 75th percentile of the distribution of outcomes for the cost of equity, which we assume is the level the CMA intended to target for PFs. It will be greater because the combination of 3 random variables, uniformly distributed, taken together will tend towards the normal

distribution curve. In the course of considering the PFs, we have run Monte Carlo scenarios to simulate this.⁴⁰

64. The results of our Monte Carlo simulations were that to get an aiming up of a 75th percentile in terms of probability, assuming the CAPM components are uniformly distributed in the CMA ranges, the resulting cost of equity distribution quantiles are⁴¹:

0%	25%	50%	75%	100%
3.376435	4.071081	4.360349	4.654047	5.387052

65. Our analysis implies the 75th percentile 'aim up' would be 29bps, instead of the CMA's 51bps. Or expressed in another way, the CMA's value of 4.88% would be the 89th percentile of this distribution.

66. If the CAPM components are normally distributed in the CMA ranges (solving for a standard deviation so that the mean = CMA midpoint, and CMA upper and lower bounds are the 1% and 99% quantiles, z score 2.326), the resulting quantiles are:

0%	25%	50%	75%	100%
3.000291	4.173930	4.368593	4.565288	5.768860

67. This implies the 75th percentile 'aim up' would be 20bps, instead of the CMA's 51bps. Or expressed in another way, the CMA's value of 4.88% would be the 96th percentile of this distribution.

68. Therefore, in our analysis, if the CMA intends to target the 75th percentile on cost of equity, it is likely that there has been significant overshooting.

69. In addition to aiming up on the cost of equity allowance specifically, the effect of over-providing on the cost of debt by approximately 30bps compared to Ofwat's reasonable estimate of sector debt costs is to add an additional 50bps to the expected return on equity (at 60% gearing).

Financeability

70. We note the CMA's approach to assessing financeability on a notional basis with an in-the-round assessment. We also note the CMA's position that "*the point value of a single credit ratio is not determinative of the conclusion on financeability*"⁴² and that "[w]e consider that the overall assessment of a credit rating requires judgement about the overall quality of credit with respect to a broad range of factors that contribute to a ratings assessment. While financial ratios play an important role in the assessment

⁴⁰ The code which we used to generate the results presented is available upon request. The tendency towards the normal distribution is called the Central Limit Theorem. See for example: Wonnacott, R and Wonnacott, T. **Introductory Statistics**. 1985. Appendix to Section 6.3, p. 584.

⁴¹ In this section we present "Wholesale" values, and hence adjust CMA's "Appointee" range to account for a retail margin of 8bps, hence reducing the quoted range by 20bps (8bps/ (1-g), where g = 60%).

⁴² PFs, Para 10.60

of credit ratings, these are not applied mechanistically by agencies, nor in isolation from a wide range of other relevant factors".⁴³

71. However, we note the CMA then focusses attention on AICR and FFO/net debt when carrying out its financeability assessment. These are of course important ratios for rating agencies and other market participants. However, in agreement with the CMA, we would caution against a narrow interpretation of particular ratio levels being absolute ratings 'threshold levels' below which it is not possible to be rated in the given category. As the CMA mentions, Moody's also publish a ratings methodology for regulated utilities that, in our view, seeks to balance qualitative and quantitative factors and weights AICR as representing only 12.5%⁴⁴ of the score used for the implied rating. Moody's methodology and published ratio guidance implies that gearing is as important as AICR, and that Ofwat's notional gearing level of 60% is at the strong end of the A3 category. This, therefore, may allow AICR to fall below 1.5x and the average implied rating to still equal Baa1. This would also be implied by the application of the full methodology which allows weak and strong metrics to offset each other for an implied rating category.
72. We also note that water licences do not require ratings from any particular agency and that different agencies take different views on the importance or otherwise of particular ratios. This is illustrated by the significant number of companies that have 'split ratings' (i.e. not rated at the equivalent category by all agencies that rate them). It would not be inconsistent for the CMA to consider the notional company credit quality as two notches above minimum investment grade in the round, even if it did consider there was a possibility that one or more rating agencies may rate it slightly lower or higher (if ratings agencies ever rated the notional company, which they do not).
73. This is relevant because we note the CMA's position that "*credit ratio analysis plays a supporting role: it provides cross-checks to help consider whether the allowed return is in practice high enough to be consistent with the investment-grade credit quality*"⁴⁵ and that "[w]e also consider that there are broader reasons for considering a WACC above the mid-point in this determination, relating to financeability and asymmetric risk."⁴⁶
74. We would caution against "aiming up" on equity allowances to deal with perceived financeability constraints, particularly when those perceived constraints may not be genuine.
75. This is particularly relevant at this point in time because interest rates have been falling for a long period of time with rates for computing the CAPM implied cost of equity being at near historical lows but regulated companies' debt books including a lag because they still have fixed rate debt that was contracted at higher rates.

⁴³ PFs, Para 10.63

⁴⁴ The weighting is 12.5% in Moody's Regulated Water Utilities Rating Methodology, published 8th June 2018.

⁴⁵ PFs, Para 10.59

⁴⁶ PFs, Para 9.670

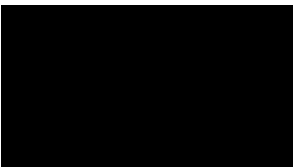
However, as the higher rate debt is replaced with lower cost debt over time, we would expect AICR to improve over time. Therefore, it is perfectly possible that for single price controls, certain metrics (such as AICR) may appear relatively weak while other metrics remain strong. In this instance we consider it appropriate to view the ratios in the round and, if necessary, to make some adjustments to notional gearing or PAYG rates, rather than to aim up on equity allowances.

76. If returns offered are too high, this risks undermining the legitimacy of the water sector and creating market distortions relative to other businesses that operate in competitive environments with more risk.

Concluding remarks

77. Ofgem invites the Panel to assess the points raised in this letter and the additional evidence submitted prior to its Final Determinations.
78. As set out in our introductory remarks, we also invite the CMA to make it clear that the findings in this price determination concern the CMA's particular statutory role in relation to water and focus only on the water industry, and should not be read across to other regulatory contexts. As the CMA will no doubt appreciate, different regulators can reasonably take different views on these issues.
79. Insofar as we have not addressed an area of PFs it should not be taken that Ofgem agrees with the position taken by the CMA.
80. We hope the above information is useful to the Panel and would be happy to discuss any aspect of it in further detail if that would be helpful.

Yours faithfully



Akshay Kaul
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Networks