1 OVERVIEW

1. On 22 June 2020 Ofwat made an additional set of submissions to the Competition and Markets Authority (**CMA**) (the **June Response**). This is Northumbrian Water Limited's (**NWL**) reply (the **July Reply**) to Ofwat's June Response.

2. We have focussed this Reply on the most material issues from Ofwat's June Response. As requested by the CMA we have not sought to reiterate arguments made in previous submissions but have cross-referred back to those as appropriate and in some limited instances summarised them where we considered that was necessary to explain Ofwat's and our own responses. Our decision not to address all the points raised by Ofwat should not be taken as acceptance and our previous submissions more fully set out our case. A tabular annex (**Annex A**) provides our perspective on some of Ofwat's other points for completeness.

3. The other Referring Companies submitted new expert reports on the base cost assessment models in their Replies to Ofwat's Response. We have conducted a review of the performance and robustness of the new models and the associated expert reports. We consider that this additional analysis may be helpful to the CMA in its deliberations. This is set out in the **Base Costs Appendix**.[1]

2 COST ALLOWANCES AND SERVICE LEVELS

2.1 ENHANCEMENT INVESTMENTS AND RESILIENCE

2.1.1 Sewer flooding resilience

4. Ofwat's June Response continues with its misconception that our base sewer flooding and resilience programmes focus on the same thing.[2] As highlighted in our SoC and our Reply the programmes focus on different types of property (those that have already experienced internal sewer flooding (base programme), and those which are at risk in the future (enhancement programme)). The types of intervention required for the two programmes are also different (for example, the base programme will incorporate behavioural change to address blockages, whereas the resilience programme will require us to invest in capacity enhancing projects).[3]

5. Ofwat suggests that our sewer flooding resilience programme could be funded through outperformance payments in future periods.[4] However, the potential rewards available under the capped outcome delivery incentive (**ODI**) for the common sewer flooding performance commitment (**PC**) are not a viable source of funding for our sewer flooding resilience scheme. Even if our performance hit the cap level in each and every year there would only be £4m of rewards available (see Table 1 below). This clearly would not enable us to recoup the £86m investment costs. ODIs are designed to provide a financial incentive for companies to outperform the service levels agreed in the FD, with incentives set to ensure benefit sharing with customers, not to provide additional investment funding in the way envisaged by Ofwat.

1 REP2001 Base Costs Appendix.
2 June Response NES, paras. 2.6 – 2.17.
3 See SoC Section 7.5 and Reply Section 3.4.
4 June Response NES, paras. 2.7 and 2.16.

Table 1: Maximum incentive rewards available under the internal sewer flooding PC[5]

	2020/21	2021/22	2022/23	2023/24	2024/25
PC level (A) [Number of incidents per 10,000 sewer connections]	1.68	1.63	1.58	1.44	1.34
Standard outperformance cap (B)	1.30	1.25	1.20	1.17	1.15
Maximum level of rewarded outperformance (C = A - B)	0.38	0.38	0.38	0.27	0.19
Outperformance incentive rate – standard (D) (£m/unit)	2.523	2.523	2.523	2.523	2.523
Maximum annual reward (E = C*D) (£m)	0.96	0.96	0.96	0.68	0.48

Source: NWL analysis of Ofwat FD sewer flooding incentive

6. Ofwat's contention that FD19 provides sufficient funding in base allowances for both programmes[6] is unevidenced and not credible. In our SoC, we explained how inconsistencies in data gathering have contributed to our planned expenditure to meet the common sewer flooding PC being overlooked by Ofwat.[7] Ofwat's 'implicit allowance' calculation cannot be relied upon[8] but, even if it was reliable, it would not be sufficient to provide funding for both programmes.[9] Companies reported their costs in different lines of data as part of their data table submissions to Ofwat for PR19. The guidance for the 'reduce flooding risk for properties' cost line indicated that this was for base sewer flooding programmes.[10] The definitions for this cost line are entirely consistent with the same lines in the Annual Performance Report submissions during AMP6. These lines are clearly designed to capture historical expenditures on the base sewer flooding programmes. For us, this covers our £82m base sewer flooding programme. Ofwat appears to suggest that there would be sufficient funding in 'base costs' for these activities outside of these lines but is unclear where they can be found or how these costs have been captured outside of these lines.

7. Ofwat discusses but does not challenge the rainfall analysis or its conclusions from our Reply[11] and restates its position that its models adequately account for climate change and urban creep.[12] We accepted the stretching service standards of Ofwat's FD19 and plan to deliver them within base costs. This is consistent with our ambition as a business and our customers concerns about addressing internal sewer flooding. This acceptance should not be extrapolated to suggest that we believe that the models adequately capture climate change and urban creep. We have been clear in our view that they do not.[13]

2.1.2 Water Industry Natural Environment Programme

8. Ofwat argues that companies underspent significantly in their AMP 6 programmes hence a more challenging efficiency may be justified.[14]

9. We acknowledge that we have underspent significantly against the allowances we were given in AMP 6 as Ofwat suggests. A key reason for this was the disconnect between the PR14 and National Environmental Programme (NEP) cycles. The Environment Agency (EA) published the final Phase 5 NEP in January 2016. The final determinations for PR14 (**FD14**) were published in December 2014 so did not, therefore, reflect the final NEP deliverables for the AMP 6 period. As a result, the FD14 NEP allowances do not exactly match the AMP6 deliverables under NEP Phase 5.

10. The last NEP is very different to our new WINEP, the new programme is materially larger in scale[15] and has a much higher programme of costs associated with p-removal activities (on which as we have shown the CMA we actually overspent in AMP 6[16]). The timelines have also been more aligned with the EA

5 Source data taken from the tables on page 33 of "Northumbrian Water – Outcomes performance commitment appendix" published as part of the PR19 FD.
6 June Response NES, paras. 2.8-2.11.
7 SoC section 7.5.3.3.
8 Ibid section 7.5.3.4.
9 Ibid Para 644-649.
10 Line 30 of the WWS2 enhancement table, which shares the same definition as APR line 4M.28, see Data tables for BP19 (ed. 09.18), SOC068, row 148 tab 'WWS2.
11 June Response NES, para. 2.12.
12 June Response NES, para. 2.15.
13 SoC, para. 711; Reply Section 3.4.2.2.
14 June reply, Cross-cutting issues, Paras 2.24-2.29.
15 Underspending on the NEP only accounts for 12% of our outperformance on wastewater totex in AMP 6 (Outperformance: £30m for NEP, £252m wastewater total).
16 See our reply to RFI 0006, Question 14.

publishing three fuller iterations of its WINEP programme before business plans were even submitted to Ofwat. Projects within the WINEP have also been given a RAG assessment with final projects certain to be included in the programme identified as 'Green' ahead of FD19, meaning that we can be certain of their requirement by the EA.

11. Ofwat also recognised this uncertainty and in the PR19 Final Methodology[17] it required companies to propose an appropriate cost adjustment mechanism to account for any potential discrepancy between the scale of the assumed and confirmed programmes with a true-up mechanism to be applied at the end of the programme. We and other companies have introduced these mechanisms and they are included in the FD19 and not in dispute. These mechanisms ensure that if companies do not deliver the statutory WINEP projects because they are removed from the scope of the programme (principally for 'Amber' schemes) then the costs would be returned to customers at the end of the AMP. The funding mechanisms for WINEP in FD19 therefore already ensure that all projects are 'Green' and are thus certain or are covered by the uncertainty mechanisms, so a further efficiency challenge as Ofwat suggests is not justified or required as the uncertainty mechanism already addresses this risk.

2.2 COSTS AND OUTCOMES INCLUDING 'CROSS-CUTTING' ISSUES

2.2.1 Catch-up challenge

12. Our SoC clearly sets out why the approach to setting cost sharing rates incentivises 'low' rather than 'efficient' submissions of costs.[18] Although Ofwat rejects this in its June Response[19] it has still not addressed the substance of our analysis and has not provided any evidence to support its assertion that companies would not underbid their costs. Our Reply sets out the way that companies reduced their bids and the magnitude of these reductions and shows that this is consistent with our hypothesis that companies cut their costs.[20]

13. A further piece of analysis that supports our arguments on the impact of Ofwat's approach to setting cost sharing rates is the amount that water companies reduced their business plan submissions between the initial and final submissions in both PR14 and PR19. This is set out in Table 2 below which shows that companies reduced the forecasts in their submissions much more significantly at PR19 than they did at PR14. This is consistent with our argument that the PR19 approach incentivised low rather than efficient cost submissions.

Table 2: Changes between initial and final business plan totex submissions in PR14 and PR19

	PR14		PR19	
	Water	**Wastewater**	**Water**	**Wastewater**
Initial plan submission	£19.9bn	£21.0bn	£26.4bn	£25.5bn
Final submission	£20.1bn	£20.3bn	£24.4bn	£23.8bn
Change from initial to final plan	+1%	-3%	-8%	-7%

Source: NWL analysis of Ofwat summary cost assessment documents for PR14[21, 22] and Ofwat securing cost efficiency appendices for PR19[23, 24]

14. It is important that cost benchmarking first understands actual costs before applying any adjustments, such as the frontier shift. As set out in our Reply Ofwat needed to consider actual cost trends in the industry.[25] We do not consider the 2018-19 year to be atypical as it followed the trend of previous years

17 Ofwat final methodology, section 9.4.3.
18 See SoC Section 6.4.
19 June Response Cross Cutting Issues, para, 2.8.
20 See Reply, Table 10, p. 56.
21 https://webarchive.nationalarchives.gov.uk/20150603222732/http://www.ofwat.gov.uk/pricereview/pr14/pap_tec140404pr14costassess_summary.pdf
22 https://webarchive.nationalarchives.gov.uk/20150603222732/http://www.ofwat.gov.uk/pricereview/pr14/pap_tec141212pr14costassess_summary.pdf
23 https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Securing-cost-efficiency-technical-appendix.pdf
24 https://www.ofwat.gov.uk/wp-content/uploads/2019/01/Technical-appendix-2-Securing-cost-efficiency.pdf
25 See Reply, Section 4.4.2.3.

and the factors driving it do not appear unusual.[26] We still consider that it is just as relevant to assessing future costs as the other years. Ofwat suggests that the data sample does not capture two full five-year cycles[27] but we consider this concern is mitigated because the model only uses the last five years of modelled costs to calculate the efficiency scores. Therefore, the model coefficients are estimated using the full 8 years of data, but the efficiency scores only take into account the actual costs in the last five years. This means that the benchmark level of costs against which companies are compared does rely in fact on a full 5-year cycle and not a longer period with more 'lower cost' years as is suggested.

15. Ofwat presents two charts in its June Response[28] which are the same as those presented in our Reply up to 2018-19. They show an upward trend in water costs that started in 2015/16 and 2018/19 waste costs not being atypical and not the highest cost year.[29] For 2019-20 onwards Ofwat uses forecasts from the companies' August 2019 submissions. We are concerned about the insightfulness of this data because of the perverse incentive on companies to reduce these forecasts to below the efficient level. In addition, these forecasts do not show the cycle that Ofwat mentions in in its June Response[30] which further undermines the validity of the comparison as this cyclicality would increase peaks in expenditure in years 2 to 4 of AMP7.

16. Ofwat has debated whether precedent supports its decision to apply a benchmark that is more demanding than the upper quartile. We note that our Reply also disputed three other precedents[31] raised in Ofwat's Response alongside the NIAUR example which are not mentioned in the June Response. We accept Ofwat's correction of our reading of the NIAUR precedent where there was a typo in the regulatory publication.[32] The most relevant precedents for assessing the catch-up challenge in a water network price control are likely to be GB electricity distribution controls given the nature of the comparators and the regulatory frameworks. Ofgem has not set more demanding benchmarks than the upper quartile. For example, its cost assessment approach for RIIO-ED1 used an upper quartile to benchmark costs.[33] We accept that regulators need to reflect different circumstances in each review. However, where a regulator chooses to step beyond precedent, this should rightly ring alarm bells and warrant exceptional explanation.

2.2.2 Frontier shift

17. On the application of frontier shift to WINEP costs,[34] as suggested in our Reply,[35] the CMA could contact the relevant benchmark companies to clarify whether they included a frontier shift assumption. Based on responses received the CMA can make its decision in light of the evidence.

18. Ofwat is correct that the application of a 1.1% frontier shift assumption applied to a wider range of costs on its own would have increased our allowances at FD19.[36] However, as Ofwat acknowledges, the frontier shift adjustment was applied to an additional year at FD19. Contrary to Ofwat's suggestion we have not argued against the application of this adjustment a year earlier. Our only point was that the combination of the change in frontier shift assumption, the application to an additional year, and its application to a broader range of costs applied a stronger challenge at FD19 than at DD19 by over £5m. The breakdown of this impact is shown in Table 3 below.

26 See Reply, paras 237 – 243.
27 June Response Cross Cutting Issues, para. 2.11.
28 June Response Cross Cutting Issues, Figures 2.1 and 2.2.
29 See Reply, Figures 10 and 11, p. 55.
30 June Response Cross Cutting Issues, para 2.11.
31 See Reply, para. 245, p.56.
32 June Response Cross Cutting Issues, para 2.12.
33 Paragraph 1.17, page 8 of RIIO-ED1 business plan expenditure assessment - methodology and results https://www.ofgem.gov.uk/ofgem-publications/85039/costassessmentmethdologyandresultsmasterv2pdf
34 June Response Cross Cutting Issues, paras. 2.17 – 2.20.
35 See Reply, para 316, p. 67.
36 June Response NES, para. 2.39.

Table 3: Impact of change in frontier shift assumption from DD to FD on Northumbrian Water

Ofwat FD19 changes	Impact on total water and wastewater totex allowances
Change to base cost allowance from switching from 1.5% to 1.1% frontier shift	+£9.4m
Introduction of frontier shift and RPEs to unmodelled costs (abstraction, business rates and TMA)	-£10.2m
Introduction of frontier shift and RPEs to metering	-£1.0m
Introduction of frontier shift and RPEs to WINEP	-£4.0m
Total impact	**-£5.8m**

Source: NWL analysis of Ofwat's FD feeder models

19. A key contributor to this net effect is the high proportion of abstraction charges that we must pay, which means in turn that the application of frontier shift to a broader range of costs affected us more significantly than the rest of the sector.[37] We further note that these are due to increase significantly in AMP7.[38] As increases to these charges are outside our control a pass-through mechanism for these costs is more appropriate. It ensures that our efficient costs are funded without any unnecessary windfall gains/losses for us and our customers.

2.2.3 RPEs on power

20. The historical evidence does not support Ofwat's contention[39] that there is a strong relationship between our energy costs and the oil price. It is very clear from Figure 13 in our Reply that there has been a weak correlation between oil and electricity prices over the last ten years, since the introduction of Electricity Market Reform and the development of contracts for difference to support decarbonisation of the electricity markets.[40] Prior to 2009 there was a much stronger relationship.[41]

21. This is supported by regression analysis (set out below) which shows a statistically significant relationship prior to 2009 between electricity and oil real price growth but no statistically significant relationship since then. This analysis confirms what can be visually observed from the data in Figure 13 of our Reply. Table 4 below shows a very strong statistically significant relationship for the two series in the period prior to 2009.

Table 4: Regression of percentage growth in real oil prices against growth in real electricity prices, 2001-2008

Dependent variable	Percentage growth in real electricity prices
Coefficient on percentage growth in real oil prices	0.633
(P-value)	(0.014)
Intercept coefficient	0.009
(P-value)	(0.822)
R-Squared	0.663
Number of observations	8
Statistically significant relationship between growth in real electricity prices and growth in real oil prices?	Yes, at the 0.05 level

Source: NWL analysis of BEIS Industrial Energy Prices[42] and BEIS Crude oil acquired by refineries price index[43]

22. However, when looking at the data for 2009 onwards, there is no statistically significant relationship as shown in Table 5 below. In fact the small correlation that exists is actually negative showing how much the relationship has changed in more recent years. This analysis combined with Figure 13 of our Reply

37 SoC Section 5.8.3.2.
38 Ibid Section 5.8.3.2 para 472.
39 June Response NES, paras. 2.40 – 2.42.
40 Reply, paras. 275 – 278.
41 Reply, Figure 13, p. 62.
42 BEIS, Industrial Energy Prices, Table 3.3.1.
43 BEIS, Monthly and annual prices of road fuels and petroleum products, Table 4.1.1.

shows that Ofwat's argument of a strong correlation between electricity and oil is baseless and contradicted by the data.

Table 5: Regression of percentage growth in real oil prices against growth in real electricity prices, 2009-2019

Dependent variable	Percentage growth in real electricity prices
Coefficient on percentage growth in real oil prices	-0.082
(P-value)	(0.251)
Intercept coefficient	0.015
(P-value)	(0.354)
R-Squared	0.143
Number of observations	11
Statistically significant relationship between growth in real electricity prices and growth in real oil prices?	No, not at the 0.05 level or the 0.10 level

Source: NWL analysis of BEIS Industrial Energy Prices and BEIS Crude oil acquired by refineries price index

23. We consider regression analysis to be a better form of assessment than Ofwat's Spearman rho tests as regressions take into account the linear correlation between variables. The Spearman rho test uses a rank correlation which computes the ranks of observations in each series (largest value is 1, second largest is 2, etc) and then computes the relationship between the ranks of the two variables. This means that the correlation only takes into consideration the ranks of the observations in a series and not the magnitude of the gaps between them. If one variable changes by a small amount when the second variable increases by a large amount, then the variables will have a small linear correlation. However, if they usually move in the same direction, they still may have a large rank correlation.

24. We have not replicated this analysis for the other variables that Ofwat examined as we do not think they add any value. The IMF crude oil price index is measured in USD and so any estimated correlation will be impacted by exchange rate fluctuations which are not relevant here – the BEIS oil price data in GBP is much more relevant. We also do not think the APX Power UK spot indices are particularly relevant as these only capture wholesale prices and not the full cost of energy that we face.

25. We do not see how the relationship shown by Figure 13 of our Reply can be "misleading" as Ofwat suggests.[44] It factually represents what happened in terms of the electricity prices facing industrial consumers. Ofwat suggests that the relationship is "*inconsistent with the fundamentals of the electricity wholesale market*" but this is because Ofwat misunderstands the relationship between wholesale prices and electricity prices that customers like us must actually pay.

26. While wholesale prices might in part be determined by the price of gas which is linked to the price of oil, these are not the only costs we pay as part of our electricity bills. For example, we must also pay towards the costs to support the initiatives driving the decarbonisation of electricity supply. This includes the costs of the Contracts for Difference that encourage renewable generation and the costs of the capacity market which helps to maintain security of supply, the costs of the electricity and distribution assets and other policy interventions by BEIS to fund decarbonisation. These costs are quite separate from wholesale or exchange traded prices (such as the APX data presented by Ofwat) which only give a partial picture of the electricity costs facing the water sector and other industries. The policy costs of decarbonising the electricity sector are significant and increasing as the UK moves towards meeting its environmental objectives which now include net zero by 2050 which will likely lead to further increases in electricity prices. We think this policy context supported by BEIS's own forecasts supports the inclusion of RPEs for energy costs.

44 June Response NES, para. 2.41.

2.2.4 Leakage

27. Ofwat's comments regarding compliance with the new leakage definition implicitly suggest that we have done something wrong.[45] This does not align with our understanding of the situation. Ofwat released the new reporting guidelines for PR19 in 2018.[46] These are only applicable from the start of AMP7 (1 April 2020). For leakage this involved a large change in the processes that need to be undertaken to provide measurement in line with the new guidelines.

28. Due to the significant change in requirements it has taken us, and other companies, time to undertake the necessary investment so that we can measure leakage against the new guidelines. This is not unusual. As a result, we were not fully compliant with the guidelines when the PR19 figures were submitted, but this is not surprising nor a cause for concern given the circumstances outlined.

29. We have been submitting 'shadow' values using the new guidelines over the last three years to monitor our compliance before the new guidelines took effect in April 2020. We will be fully compliant with the guidelines for the start of AMP7's 2020/21 reporting year as we are required to be.

2.2.5 Abstraction charges

30. We do not think that Ofwat's arguments that abstraction charges are partially controllable[47] impact our proposals to introduce a pass-through mechanism for these costs.[48] We do not accept that we have significant control over abstraction charges as they are set externally by the Environment Agency. We would also highlight that the majority of the cost increase is driven by changes in rates, which are clearly not within our control.

31. Ofwat raises a point on the Kielder scheme in that it accounts for c.80% of our abstraction charges in our North East region and that we can therefore control a portion of these costs in the same way as other costs. However, we consider that this vastly overstates the element of costs that are controllable in practice as set out below:

    - of the 2020/21 Northumbrian Water abstraction charges, around 20% relate to Essex & Suffolk and 80% for the North East region;
    - for the North East region, 20% of the abstraction costs relate to Environment Agency charges (and so are not under management control);
    - for the remaining 80%, the Kielder agreement charge is dominated by a £19m pa in-perpetuity payment for the sunk cost of the initial assets and an £8m pa charge for business rates. These make up around 91% of the annual costs recharged to the Environment Agency under the agreement;
    - thus, only 9% of the Kielder agreement charge could be viewed as having some degree of controllability (operating costs and capital maintenance). Even these costs are incurred through agreement with the EA and scrutinized by them; and
    - in summary, for abstraction costs as a total, only 6% of the costs (80%*80%*9%) could be classed as having some degree of controllability by Northumbrian Water and none of these costs are entirely within the gift of NWL's management.

32. Given this very low level of control and the potential risk of future changes in abstraction charges, we maintain that a cost pass through mechanism, consistent with general regulatory practice with respect to uncontrollable costs, is appropriate.

45 June Response NES, paras. 3.10 – 3.13.
46 https://www.ofwat.gov.uk/wp-content/uploads/2018/03/Reporting-guidance-leakage.pdf
47 June response NES, paras 2.28-2.32.
48 SoC, Section 5.8.

3 ALLOWED RETURNS AND FINANCEABILITY

3.1 ALLOWED RETURNS

3.1.1 MARs

33. Ofwat queries our analysis and conclusions that the residual MAR premium could be below 1.0x, arguing that this is heavily dependent upon the input deduction to account for 'wholesale outperformance' and that this seemed to include cost of equity outperformance.[49]

34. Ofwat has incorrectly interpreted the Jeffries report which assumes that 'outperformance' is equivalent to an 18% RCV premium.[50] Jeffries uses a 'Sum Of The Parts' valuation, which does not require discounting cash flows using a discount rate. Jeffries does not mention cost of equity outperformance in its report and there is no evidence to indicate it is an assumption in its calculation. Instead the evidence suggests that the 'outperformance' assumption is due to financing and totex/ODI outperformance:

- in its company valuation/risks section, Jeffries cites "*risks include outperformance for its water business, bond yields and M&A activity in the sector*";[51]
- Jefferies highlights financing outperformance and scope for ODI outperformance;[52] and
- Jefferies base case assumption is "*8.1% average nominal returns over AMP7, with 1.2% financing outperformance and 0.7% totex/ODI outperformance*".[53] The nominal cost of equity at FD19 was 6.27%. Adding the 1.2% outperformance due to financing and the 0.7% outperformance on totex/ODI implies a return of c.8.1%, which suggests that there is no assumption of outperformance on cost of equity.

35. Ofwat's evidence on MARs relies on one analyst report from Barclays.[54] We considered evidence from a range of eight different analysts' reports.[55] We consider that the Jeffries report has insufficient information to support Ofwat's assertion. Furthermore, the Jeffries report conclusions were within our overall quoted MAR range of 0.93x to 1.08x and did not represent either end of that range. Ofwat's June Response does not lead us to change our conclusions.

36. Ofwat states its belief that the Europe Economics calculations are not distorted by the 2019 election.[56] The analysis in our Reply illustrates that the election results have clearly impacted MARs as seen in share price movements, which provides evidence that share prices are affected by a myriad of factors other than just outperformance as we have argued.[57]

3.1.2 Beta

37. Ofwat challenges the '**Gregory Paper**'[58] and submits a further report by Europe Economics (the **EE Beta Paper**).[59] In particular Ofwat challenges the conclusions that the long-run beta's should be used, estimated from the most recent structural breakpoint, that the monthly beta is the most appropriate frequency to use and that the Vasicek adjustment should be used.[60]

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49 June Response Risk and return, para. 3.4 and Table 3.1.
50 R001 - Jeffries (2020), 'United Utilities: Feedback from CMD; Moving Up the Confidence Ladder', 4th March. P. 3, Exhibit 4.
51 R001 -Jeffries (2020), 'United Utilities: Feedback from CMD; Moving Up the Confidence Ladder', 4th March. P.7.
52 R001 -Jeffries (2020), 'United Utilities: Feedback from CMD; Moving Up the Confidence Ladder', 4th March. P. 1.
53 R001 -Jeffries (2020), 'United Utilities: Feedback from CMD; Moving Up the Confidence Ladder', 4th March. P. 2.
54 June Response Risk and Return, Table 3.1. Ofwat, MAR analysis spreadsheet, March 2020, REP135.
55 Reply, Annex 1: MARS Analysis (Tables 38-40).
56 June Response Risk and Return, para. 3.6.
57 Reply, Section 6.3.
58 REP068, Alan Gregory, Richard Harris and Rajesh Tharyan, A Report on the Estimation of Beta, Prepared for Anglian Water Services Ltd, GHT 2020 – Beta Appendix. In our Reply this is referred to as the Beta Academic Paper.
*59 R002 – Europe Economics, 'Further comments regarding beta', June 2020 (**EE Beta Paper**).*
60 June Response Risk and return, para. 31.4 pp12-14.

38. Professor Alan Gregory and his academic colleagues have responded to these challenges (the **AGRF Beta Response**).[61] In particular:

- we support their conclusions that the Europe Economics approach is inconsistent with the findings of the UKRN study in its considerations of the time window which suggested a long-run approach based around the structural breaks was appropriate.[62] Despite Ofwat's practical difficulties with the estimation of the structural break we are satisfied that the Gregory Paper analysis is robust on this point and that the most appropriate period for estimating the beta is a long-run period estimated based on the last structural breaks in the data:

  "Put simply, if there is no structural break, and absent any evidence whatsoever that one and two year betas forecast the 15 year beta, why would one throw away observations that provide information on the long run unconditional beta?"[63]

- we continue to agree that daily betas are biased downwards and are subject to reference day risk.[64] Ofwat's PR19 approach focused on short-run daily beta estimates. Whilst Ofwat is critical of the monthly beta estimates used[65] it does not challenge the issues highlighted in the Gregory Paper regarding daily estimates.[66] At the very least the CMA should consider a range of evidence;[67] and
- we continue to agree that the (necessarily) noisier estimates of beta based upon low frequency (monthly) estimates could be dealt with using the Vasicek adjustment.[68] We note that despite challenging this adjustment in the EE Beta Paper [69] Europe Economics highlighted the appropriateness of this adjustment in its early work for Ofwat, albeit noting that impact of applying the adjustment on daily data was marginal.[70]

3.1.3 De-levering and re-levering

39. Ofwat supports the CMA's approach in the NATS (En Route) (**NERL**) Provisional Findings (**NERL PFs**) which Ofwat believes would result in a cost of capital that is strictly increasing with gearing.[71] Ofwat identifies four approaches that could be adopted and concludes that its PR19 approach gives the highest values of notional equity beta compared to alternatives.[72] Ofwat argues that, taking the raw beta estimate as given, a lower notional equity beta than its FD19 point estimate of 0.71 could be supported.[73]

40. We do not consider that Ofwat's approach to de-levering and re-levering beta is appropriate and set out the reasons for that in our previous Reply.[74] Below we provide commentary on the two new specific methodologies presented by Ofwat (the 'Ofgem approach' and the 'book value approach') as well as respond to Ofwat's comments on the 'listed comparator approach'. However, having considered Ofwat's new evidence and arguments, we remain of the view that there is no reasonable basis for changing from the 'enterprise value approach'.

41. **The 'Ofgem approach'**: This emerges from an Indepen report for Ofgem (**Indepen Report**)[75] which suggests that the equity beta may not in practice be a linear function of the level of gearing. If the relationship is essentially flat within a range of 'reasonable' levels of gearing, then any attempt to calculate an asset beta would potentially under-estimate the true asset beta. Having noted this, the Indepen Report suggests continuing with the usual regulatory practice of establishing the asset beta. In itself, this is not controversial and entirely consistent with recent regulatory practice. However, in a radical departure from

*61 'A response to 'further comments regarding beta' by Europe Economics, AGRF Ltd, Alan Gregory, Richard Harris and Rajesh Tharyan, June 2020 (**AGRF Beta Response**) (REP2002).*
62 REP2002 AGRF Beta Response, page 1.
63 REP2002 AGRF Beta Response, page 6.
64 Reply, section 6.4.3, page 93.
65 June Response Risk and Return, para. 3.14.
66 Gregory Paper, REP068, page 14 – 15.
67 Reply Section 6.4.3.2.
68 Reply, Section 6.4.3., paras. 441 – 443.
69 R002 – Europe Economics, 'Further comments regarding beta', June 2020, Section 1.3.5.
70 Europe Economics, 'PR19 – Initial Assessment of the Cost of Capital', December 2017, p.49, footnote 61. Available: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Europe-Economics-Final-report.pdf#:~:text=Europe%20Economics%20has%20been%20commissioned%20by%20Ofwat%20to,each%20of%20the%20WACC%20parameters%2C%20within%20which%20a
71 June Response Risk and Return, para. 3.15.
72 June Response Risk and Return, paras. 3.16 – 3.17 and Table 3.2.
73 June Response Risk and Return, para. 3.17.
74 Reply, paras. 450-453 and 561-565.
*75 Indepen (2018), 'Ofgem Beta Study – RIIO-2, Main Report', December, p.33-35 (**Indepen Report**) Available: https://www.ukrn.org.uk/wp-content/uploads/2019/01/final_beta_project_riio_2_report_december_17_2018_0.pdf*

this practice it then recommends that re-gearing be carried out using not the actual gearing and a target RAB gearing of 60%, but a MAR adjusted gearing, calculated by assuming a MAR Value of 1.1:[76]

- this strikes us as being circular in its logic. The purpose of the exercise is to establish the fair CAPM-WACC. If this figure is accurately established, then by definition the expected MAR should be 1.0x;
- any 'performance wedge' as identified by Ofgem and Indepen should be dealt with through opex and capex control or incentive adjustments (depending on the source of the wedge), not through adjusting the cost of capital. Indeed, we noted in our SoC that the performance of companies in the energy network controls is not comparable to water companies;[77] and
- evidence from observed MARs was likely to be misleading when it comes to making any inference about the cost of equity. This approach involves an uplift to enterprise value gearing (56.4%) to account for the perceived market premium (which is assumed to be set at 1.1 in the calculation[78]). The MAR could be negative as far as 0.93x and is likely to be around 1.0x RCV.[79] Ofwat has itself assumed a lower MAR in its calculations for Table 3.1 of 1.02-1.07[80] so a 1.1x adjustment is simply incorrect. The calculation provided is therefore flawed and in effect the 'Ofgem approach' is essentially the same as the Enterprise Value approach. All this simply reinforces the point that it is theoretically incorrect to make arbitrary adjustments to the observed gearing by assuming a MAR of anything other than 1.0.

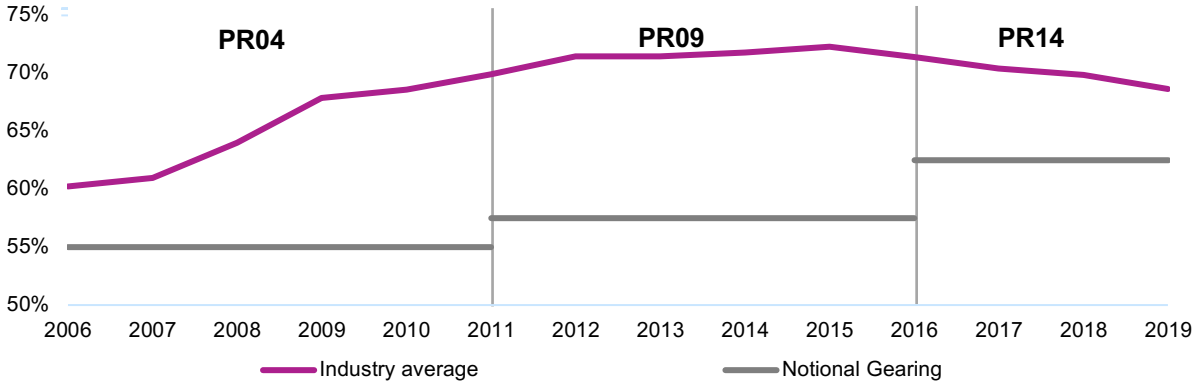
42. **The 'book value approach':** The book value approach is not theoretically sound in that it uses book values rather than market values. The Modigliani Miller (**MM**) theory stipulates how market values, and risk premia on debt and equity change with gearing under a given set of market conditions. The MM framework is based on the concept of arbitrage, which requires market values as opposed to book values. In particular, MM suggested an arbitrage mechanism to prove their argument. They argue that the market values of firms with the same level of risk will be the same regardless of their capital structure. This is because the simultaneous buying and selling of shares with companies with the same business risk but different prices (sell the overvalued stock and buy the undervalued stock) will result in the prices converging until arbitrage is no longer possible.

43. Book values are not an appropriate measure of company value as they represent the total value of a business' assets on its balance sheet whereas market values reflect the value of the company. Moreover, book value is an accounting item which is subject to adjustments such as depreciation that need to be considered.

44. Regarding the **'listed comparator approach'**, whilst it makes economic and financial sense it requires the CMA to set gearing of 56% which is not appropriate for financeability purposes. We argued why this would not be appropriate in our Reply.[81] Ofwat has subsequently stated that the notional gearing for price review periods from PR04 has been in the range 55 – 62.5%, and that this suggests that changes to gearing levels within this range are reasonable.[82] Ofwat's latest statement is not consistent with its approach in previous price controls. Specifically, it has adjusted the notional gearing levels in each subsequent price control following movements in actual leverage in the sector- notional gearing has evolved in line with actual gearing. For example, at PR14 the increase from 57.5% to 62.5% and the decrease in PR19 to 60% reflected an increase and a decrease in gearing levels respectively. The decrease in sector average gearing over AMP6 has already been reflected in the 60% notional gearing assumption for AMP7, which has reduced from 62.5% a further, significant, drop to 56% is not 'reasonable'.

76 Indepen Report, p.35.
77 SoC, Section 5.2.3.3, p. 61.
78 June Response Risk and return, Table 3.2, Footnote 50.
79 Reply, Figures 21-22, p.90.
80 June Response Risk and Return Table 3.1.
81 Reply, Section 7.6.2.
82 June Response Risk and Return, para. 4.18.

Figure 1: Average water sector gearing (2005-06- 2019-20) and notional gearing assumptions at PR04, PR09 and PR14



Source: NWL analysis of historical gearing and price control data

3.1.4 Debt outperformance wedge

45. Ofwat provides analysis of water sector bond spreads to 50:50 A/BBB iBoxx from December 2019-June 2020 which it considers supports an outperformance wedge on new debt higher than 15bps.[83]

46. For a long-run WACC, evidence on outperformance across longer time frames is most appropriate – in their expert report, KPMG and Professor Alan Gregory analysed 20 years of historical data[84] which is much more appropriate than a very short time window most of which is made up by a global pandemic.

47. Ofwat, once again, does not control for credit and tenor. For example, three of the four bonds Ofwat uses are A3, which is at least one notch above the notional company and arguably two notches given the downgrades that have followed FD19.[85] Ofwat suggests that the performance of companies with gearing at or close to the notional level is most relevant and correspondingly analyse the performance of those bonds to identify a higher wedge, but gearing will form part of the rating assessment. To attempt to control for gearing and neither tenor nor other aspects covered by the rating is simply not appropriate.

48. We reiterate that there is no solid basis for applying an outperformance wedge. Any wedge observed in this latest data from Ofwat is likely to be driven by credit and tenor effects or market effects driven by COVID-19.

3.2 FINANCEABILITY

3.2.1 Stress testing

49. A key reason for our decision to seek a redetermination to the PR19 FD is that the package is unbalanced in the round. In our SoC, we undertook an analysis of the overall financeability of the package including a base case assessment of the expected performance in AMP7 and a series of downside scenarios including scenarios that both we and Ofwat developed. In our Reply, we presented analysis to illustrate why the base case scenario in our SoC was appropriate.[86]

50. **PCs/ODIs**- The calibration of PCs and ODIs implies we will incur penalties on a mean expected basis. Our SoC analysis included an ODI penalty of £12m in the base case.[87] In its Response Ofwat identified some PCs against which we would expect to earn outperformance payments (e.g. supply interruptions

83 June Response Risk and Return, paras. 3.40-3.43.
84 KPMG - Estimating the cost of capital for PR19, March 2020, SOC416, section 5.2. Reply, para. 463, p.98.
85 June Response Risk and Return, Table 3.3.
86 Reply, para. 508 - 513
87 SoC, Table 57, p. 193.

and pollution incidents).[88] Consequently, in our Reply we noted that we have 35 financial ODIs and undertook a more robust analysis of common PCs which implied a penalty range on a mean expected basis in the range -£11m to -£22m.[89] The £12m penalty is at the conservative end of this range.

51. In its June Response Ofwat has not challenged the analysis in our Reply nor has it presented better analysis at an aggregate ODI level. Instead it states that our current performance indicates poor asset health and a lack of resilience and suggests that the expected underperformance is driven by expectations on **unplanned outages (UO)**.[90]

52. UO is a novel metric and the measurement across companies is not yet mature.[91] The target is based on the industry average, but companies were not compliant with the definition when setting their business plans. Several parties highlighted issues with the consistent reporting of UOs[92] and an independent review was undertaken for Ofwat.[93] It is therefore not clear whether our numbers on UOs represent genuine performance issues or if they are a result of reporting inconsistencies. We accept that if the CMA chooses not to apply a financial incentive on UOs this would affect the overall financeability position but, with the package as it is, it is unfinanceable.

53. **Costs:** We have demonstrated that the challenge on opex is greater than or comparable to opex reductions achieved by significant structural or regulatory changes in other sectors.[94] Ofwat argues that we incorrectly compare five and two year reductions with sustained annual changes in costs for our benchmarks.[95] We do not consider this to be incorrect, the purpose of the analysis was to illustrate how stretching the FD19 efficiency challenge is.[96] This is done using benchmarks that are a result of significant structural changes (e.g. the introduction of competition) which follow with material operating cost reductions. The examples are clearly referenced and sourced.

54. Our SoC included a totex overspend of £85.1m in the base case for our financeability assessment and new information spend of £37.7m.[97] Of that £85.1m, £14m is opex. A £14m opex overspend over AMP7 is likely given that to meet Ofwat's FD19 (£320m per year on average), we need to cut opex (in real terms) by £20m a year on average relative to actual and allowed opex spend in AMP6 (c.£340m per year on average).This is double the reduction we set out in BP19.[98]

55. Ofwat also highlights that we do not comment on capital maintenance.[99] Operating costs have a significant impact on interest coverage ratios (relative to capex) hence we therefore focused on this in our previous analysis. The £726m allowance for capital maintenance at AMP7 represents an 11% reduction to our expected AMP6 outturn capital maintenance costs of c.£815m. While capital maintenance allowances for wastewater have increased relative to outturn costs at AMP6 by 6%, the reduction for water has been substantial at 20%. This merely adds to our base cost challenge and further supports our judgement that FD19 is likely to result in cost overruns.

3.2.2 Credit rating assessment and ratio guidance

56. Ofwat highlights improvements in credit scores for two qualitative factors in Moody's most recent credit opinions (revenue risk; and scale and complexity of capital programme and asset condition risk) which it argues outweigh the negative impact of the reduction of the stability and predictability of the regulatory environment sub-factor.[100] Ofwat notes that these changes have not been reflected in amendments to the ratio guidance and presents this as further evidence for its argument that it should not be tied to rating

88 Ofwat Response Northumbrian Water, REP022, para. 1.12.
89 Reply, Section 7.4.2.1.
90 June Response NES, paras. 3.2 – 3.3.
91 SoC, Section 7.7.
92 SoC, Table 44, p. 144.
93 Ofwat and WaterUK - Targeted review of common performance commitments, 19 December 2017, SOC219.
94 Reply, Section 7.4.2.5.
95 June Response NES, para. 2.44.
96 Reply, para. 530 – 532.
97 SoC, Table 57, p. 192 and Table 52, p.175.
98 Reply, Figure 26, p.112.
99 June Response NES, para. 2.44.
100 June Response Risk and Return, paras. 4.3 – 4.6.

agency guidance for specific financial ratios at a specific point in time.[101] The arguments made in our Reply still hold.[102] Debt holders and investors rely on rating agency opinions and by consequence the methodologies they use. These therefore represent the most relevant market-based tests for financeability.[103] Ofwat itself relied on these ratio thresholds, having solved the PAYG adjustment to achieve an AICR of 1.5x, indicating that it recognises the importance of these ratios in setting credit ratings.[104]

57. Moody's has not released any official guidance that it plans to alter its minimum thresholds on ratios required to achieve a particular investment grade rating. It is not appropriate for Ofwat to try and opine on how rating agency methodologies or ratio thresholds should be affected by changes in other aspects of the ratings assessment. Ofwat has not taken into account the fact that there could be other reasons why Moody's has not adjusted its ratio thresholds. For example, there is sufficient evidence to suggest that the reaction to FD19 by rating agencies was credit negative.[105]

3.2.3 PAYG

58. We argued that PwC's analysis did not appropriately take into account the impact of the evolution of interest rates in its assessment and conclusions.[106] Ofwat does not consider that this should alter PwC's conclusions because market implied interest rates are the most robust way of projecting forward interest rates and if interest rates moved differently in the future, Ofwat can use the PR24 review to reset allowed returns and reconsider the use of financeability levers for the period 2025 - 2030.[107]

59. We maintain our arguments that adjustments to PAYG rates do not represent an appropriate solution to addressing financeability concerns, and rating agencies do not consider these adjustments in their credit rating assessments.[108]

60. While the market implied interest rates might be the best predictor of future interest rates, it is necessary to consider the conclusions that are derived under different high/low interest rate scenarios and whether PwC's findings hold under these different interest rate scenarios. Neither Ofwat nor PwC have undertaken this analysis. Their conclusions are therefore dependent upon current forward curves which are very uncertain.

3.2.4 Remedies: Notional structure

61. Ofwat states that enterprise value gearing is an illustration of a notional gearing level the CMA could adopt. Ofwat notes that notional gearing for price review periods from PR04 has been in the range of 55% - 62.5%, suggesting gearing levels in this range are reasonable, and comments that a lower gearing would reduce the overall debt level and the debt interest cost.[109]

62. Our existing arguments on why adjusting the notional structure is not an appropriate still hold.[110] We discuss notional gearing levels since PR04 in section 3.1.3 above. Our evidence suggests that a lower gearing would increase the proportion of embedded debt, so interest costs increase and the impact on ratios is not material.[111] Ofwat does not appear to have engaged with this.

101 June Response Risk and Return, para. 4.6.
102 Reply, Section 7.3.
103 Reply, section 7.3.2, para 495 – 496.
104 Reply, para. 494.
105 Reply, Annex 2, section 10.13, page.142.
106 Reply, para 492.
107 June Response Risk and Return. Para. 4.13.
108 SoC, Section 10.5; Reply Section 7.2.
109 June Response Risk and Return, paras. 4.15 – 4.20.
110 Reply, paras. 561-565.
111 Reply, para. 564.

ANNEX A: ADDITIONAL COMMENTARY ON THE JUNE RESPONSE

Table 6: Northumbrian Water's Reply on additional points covered in the June Response

Ofwat challenge	Our Reply
Reliance on third party evidence (including concerns about potential lack of independence): Paras. 1.7 and 2.26, June Response NES	We consider that third party evidence and input to the objective CMA process is helpful and important. It can only improve decision making. The CMA is more than qualified to make judgements about whether the governance of different groups ensures sufficient independence. We do not consider that funding for a specific group disqualifies it from independence. Where third parties present good evidence or arguments that should not be automatically dismissed because of concerns about their independence, the evidence and arguments presented obviously need to be considered on their merits first.
Better Regulation principles: Para 1.12, June Response NES	We don't see the referencing of these principles as a material change to our previous arguments. We note that our Reply focussed on the arguments raised in Ofwat's Response.
Essex resilience- drivers for the scheme: Para. 2.24, June Response NES	It is misleading of Ofwat to state that the drivers for this scheme are already factored into the WRMP process as we are clear that this is not a supply-demand scheme under the WRMP. The factors of population growth, reduced rainfall and demand fluctuations are relevant to an overall consideration of risk from a resilience perspective.
Essex resilience- options appraisal: Para. 2.25, June Response NES	The options appraisal is presented in our investment case.[112] We also discussed the options appraisal at the site visit.[113] Given the nature of the resilience risk the only effective and cost efficient mitigation is to secure the capacity of DI at Hanningfield WTW by ensuring that Hanningfield reservoir is maintained at appropriate levels on a year-round basis. The only other viable option is to increase the capacity of Layer WTW and provide additional treatment at other WTWs but this would require much more substantial investment and would be less cost effective.
IED – challenge to the scale of the costs: Paras. 2.34 – 2.36, June Response Cross Cutting Issues	We have been clear throughout our submissions that there is some uncertainty around the IED compliance costs.[114] These will ultimately depend on consents and approvals from the Environment Agency (**EA**). We may be able to mitigate the costs through changes in the compliance specification that are agreed with the EA during that permitting process. We have provided an enhancement case outlining the need, options appraisal and efficient costs of the scheme.[115] We consider that the proposals we have outlined are well evidenced and efficiently costed and should be funded. Our cost assessment has been independently benchmarked and is robustly assessed. Ofwat argues that 'these costs seem high' but provides no underlying analysis or evidence to challenge the costs. We note that there is also no underlying analysis for the EA estimate of £12-20m beyond an email statement. Our proposal includes a two-way uncertainty mechanism. We will always have incentives to outperform cost allowances. The incentive to pursue efficiency is distinct from the allowances. We would be happy to adhere to an audited process for judging that reported costs related solely to the IED, as part of an uncertainty mechanism.

112 SOC276 Essex Resilience Enhancement Business Case.
113 Northumbrian Water Site Visit slides, slide 39.
114 See SoC Section 9.4.3 and Reply Section 9.22 para 610.
115 REP069 Reply Appendix 5: IED Enhancement Case Appendix.

Costs issues – impact of adverse weather: Paras 2.45, June Response NES	The case study evidence merely seeks to highlight the significant impact that bad weather events can have on our performance and costs. Bad weather is clearly outside of management control and demonstrates that the scenarios we have assessed are highly credible. In FD19 and its Response Ofwat argued that the 2018-19 year was a high-cost year driven by bad weather. They used this justification for increasing the efficiency challenge beyond the Upper Quartile. Hence, whilst Ofwat correctly highlights that the period covered by the cost allowance data include some bad weather events they have also sought to adjust allowances when these events occur.
Catch-up efficiency challenge: Policy scrutiny Para 2.6, June Response Cross Cutting Issues	Ofwat states that "*Nine of the 11 points mentioned by Northumbrian Water were raised at final determinations resulting from information that became available after the draft determinations*". It infers that this is justification for its lack of consultation on these matters and that its policy was subject to appropriate scrutiny. Ofwat had over three months of time between the DD19 responses from companies and FD19. This is more than enough time for Ofwat to have consulted on these matters and sought replies from companies. We note that recently Ofwat issued a consultation for a single week[116] demonstrating that rapid consultations can be completed in much shorter timeframes. Indeed we recall that many in the sector were actively encouraging Ofwat to consult further on several issues following the DDs because of their materiality and the uncertainty of the outcome. Ofwat instead chose only to reveal its approach in the FDs leaving companies with no opportunity then other than seek a redetermination.
Catch-up challenge: Achievability, Overall level of stretch: Outcomes stretch at PR19 compared to PR14 Paras 2.7 and 3.2-3.4, June Response Cross Cutting Issues	Ofwat repeats its view that "*the level of stretch is similar between PR14 and PR19 and is achievable for an efficient company*". We fundamentally disagree with the statement that the stretch at PR14 is comparable to PR19. In our SoC we provided evidence that the stretch on outcomes was substantially higher in PR19 than at PR14.[117] In the reply we also highlighted that in aggregate the cost challenge was much higher between the business plans and the FD19 than during the same process at PR14.[118] Within our SoC there was also additional evidence on the level of stretch in the package provided independently from Economic Insight.[119]
Covid-19: Paras. 4.1 – 4.17, June Response Cross Cutting Issues	Ofwat provides a more detailed commentary on potential impacts of Covid-19. This was more comprehensive than its previous submission which appeared to be partial. We provided an annex attached to our previous Response setting out our views on the different ways that the pandemic could impact on companies in the water sector as a potential framework for the CMA to consider impacts.[120]
Total Market Return: Para 3.18, June Response Risk and Return	Ofwat accepts that the OBR's lower long run RPI-CPI 'wedge' is a 'valid data point' and agrees that 'the latest year of returns data should be considered' but that 'this may not indicate a strong case for moving' from their FD19 figure. We consider that the latest information should be used in these estimates and taken together we agree with Anglian that this is likely to result in an uplift to the FD19 TMR.
Mitigation measures in Covid-19 scenarios: Para. 2.3, June Response Risk and Return (Confidential)	We consider that the FD should provide sufficient headroom to manage plausible downside scenarios. We made similar arguments in our Reply to Ofwat that the previous outperformance cannot be a justification for a settlement which, without that outperformance, would not be financeable.[121]

116 See: https://www.ofwat.gov.uk/consultation/covid-19-and-the-business-retail-market-proposals-to-address-liquidity-challenges-and-increases-in-bad-debt-a-consultation/
117 SoC paras 488-492.
118 Reply section 4.3.2 and table 9.
119 Economic Insight 2020, SOC413.
120 REP065, Reply Appendix 1: Covid-19 Appendix.
121 See Reply, para. 504, p. 105.

Use of RoCE as a measure of overall performance: Paras. 2.2 – 2.4, June Response Risk and Return	The Economic Insight report[122] referenced compares WACC with RoCE which is the correct comparison to make for overall returns. This aligns with the CMA's own approach to assessing profitability.[123] Ofwat states that this comparison only takes account of operational performance. This is correct but not relevant to the issues at over the level of stretch. The Economic Insight report shows that the sector has not systematically outperformed on a RoCE metric. This indicates that there is no systematic outperformance of totex and ODIs which we think are the most relevant issues for setting PR19. It does not point towards a requirement to set more stretching efficiency challenges or incentive targets due to historical outperformance.
Cost sharing: Paras. 2.9 – 2.13, June Response Risk and Return	Ofwat argues in favour of its asymmetric approach by saying customers of companies with less stretching/efficient plans should receive greater protection through cost sharing rates. As we have pointed out in our SoC, the mechanism incentivises low rather than efficient costs which we do not think is in customers' interests. Furthermore, we consider the Ofwat is not taking account of the importance of incentives to outperform which benefit customers in the long run through the repeated game dynamic of price controls which generates significant benefits for customers. We maintain that the 50:50 cost sharing best delivers the customer interest.
Relevance of prescribed scenarios for stress testing: Paras. 4.24 – 4.25, June Response Risk and Return	Ofwat maintains its argument that their prescribed scenarios (which we run our downside tests on) were not intended for the purposes of downside scenario testing in this way. We explained in our Reply why we do not accept this position.[124] We considered a number of downside scenarios in our analysis, including Ofwat's prescribed 10% totex overspend scenario. As set out in our SoC, in the base case (which includes the additional costs we expect to incur on on totex and ODIs as a result of the stretching FD package) a 5% totex overspend would result in credit metrics deteriorating to a level commensurate with Baa3.[125] We also noted that the totex gap (disallowance on efficient costs) in FD19 relative to our BP19 is c.6%.[126]
Adjustments in the low inflation and deflation scenarios overstate the interest charge and undermine the credibility of the modelling: Para. 2.3, June Response Risk and Return (Confidential)	Inflation affects the interest rate on index-linked debt (**ILD**) in two ways: 1) through the real interest rate applied to the notional balance; and 2) the inflation accretion from the inflation element applied to the notional amount. In our assessment, we reflected the change in inflation in both elements. However, Ofwat argues that we should not change the real interest rate assumption with changes in inflation. In this case, the only effect on ILD from a change in inflation would be through the inflation accretion element. Even if we were to follow Ofwat's view of not adjusting inflation on the interest rate element, the difference between our original assessment and Ofwat's view results in an increase of only 0.01x on AICR in both scenarios (1.26x to 1.27x in scenario 1, and 1.12x to 1.13x in scenario 2).
Moody's and the rate of transition to CPIH: Paras. 4.21 – 4.22, June Response Risk and Return	We presented several arguments in our SoC[127] and Reply,[128] which Ofwat has not responded to. For example, the risk of a mismatch between revenues (CPI linked) and debt costs (RPI linked). Moody's has created a precedent for stripping out excess revenues from CPIH cash flows, where relevant, to maintain comparability between water companies. We do not see any reason why Moody's would change its approach. Therefore, we believe that this policy choice should be taken into account by the CMA.

122 REP067 Appendix 3: Economic Insight Appendix.
123 CMA Approach to profitability and financial analysis, para 26, p. A9.9-8, https://assets.publishing.service.gov.uk/media/576bcc14e5274a0da9000080/appendix-9-9-approach-to-profitability-fr.pdf
124 See Reply, para. 546, p. 116.
125 See SoC, para. 1114.
126 See SoC, para. 1057 which refers to the totex gap of c.6%.
127 SoC section 10.8.1.2, pp.202-204.
128 Reply paras 572-576.

	Ofwat has not provided any evidence to show that rating agencies will not reverse the additional revenues from CPIH even if this is reflected as a permanent change. The purpose of Moody's stripping out these excess cash flows for SVT and UU was to maintain comparability with other water companies: *"To maintain comparability with other water companies during AMP7, we will continue to deduct the full amount of the RCV run-off when calculating our AICR".*[129]
Dividends: Para. 3.2, June Response Risk and Return (Confidential)	Investors would not focus on the yield on equity portion of RCV. Our analysis included all dividends that were declared at the time it was conducted, which for the comparator companies included interim but not final dividends (as not declared at that point). A number of the comparator companies have since announced their final dividends for FY20, which if anything will increase the comparator yield. The comparison in our analysis was done on a like for like basis. We presented one chart which included special dividends and one which excluded the special dividend for all companies. Our gearing is below the sector average. Our analysis showed gearing increase when the special dividend was paid, but it subsequently decreased the following year.
Gearing sharing outperformance mechanism: Para. 5.2 to 5.8, June Response Risk and Return	We presented our arguments on these points in our SoC[130] and Reply.[131]
RPEs for chemicals: Page 19 and 20, EE Response on RPEs and Frontier Shift	The four chemicals referenced by Europe Economics are listed as fertilizers in the World Bank documents. We don't see the relevance of these to the chemicals used by water companies. The COVID impacts identified by Europe Economics may apply to some chemicals but the chemicals we purchase are driven by different demand/supply considerations. Supply has been reduced as several chemicals are the by-products of other processes where the demand for the primary process has fallen and this reduced supply. Furthermore, due to tightening standards on water treatment requirements, demand for the chemicals we buy is going to increase significantly as the sector meets these new standards. The Argus Media report referenced by Europe Economics is about the European Petrochemical Market. Given that we don't buy many petrochemicals we again don't see how this report is relevant to our redetermination. The points set out in our Reply give a more accurate reflection of the circumstances and cost pressures we are facing based on the chemicals that we must purchase.[132]

129 Moody's, Credit Opinion, United Utilities Water Limited: Update following PR19 final determination, 4 March 2020, REP061.
130 SoC section 8.14, p.163.
131 Reply paras 475-480, pp.100-101.
132 Reply, Section 4.5.2.