Anglian Water

PR19 CMA Redetermination

Full response to the CMA's working papers on Cost of Capital

Submitted 27 January 2021

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Chapter A: Overview

1 Introduction

(1) This reply contains additional points on the cost of capital working papers and Ofwat's initial responses to those dated 18 January 2021. It also reflects on points raised at the Cost of Capital Roundtable meeting that the CMA held with Main Parties on 20 January 2021. This reply should be read in conjunction with Anglian's initial reply, dated 18 January 2021.

(2) The rest of the note proceeds as follows:

(i) First, it summarises the key principles that should drive the regulatory assessment of the allowed cost of embedded debt;

(ii) Second, it addresses additional points on the Cost of Debt (CoD);

(iii) Third, it addresses additional points on the Cost of Equity (CoE);

(iv) Fourth, annexed to this note[1] additional points of detail on the CoD including (1) more detailed analysis of the cost of carry, (2) industry average costs reported in the APRs, (3) the ratio of new to embedded debt, (4) additional points on the 'halo effect' and (5) modelling of the RCV-weighted collapsing average and issues identified with the CMA's calculation of the same.

(v) Fifth, annexed to this note is an independent academic report, 'A Simulation of the Cost of Equity for the Water Industry' by Gregory, Harris and Tharyan[2], which provides a simulation on the degree of uncertainty in the CMA's beta estimate.

2 Summary: Regulatory approach the CMA should take to embedded debt

(3) When estimating the cost of embedded debt, Anglian considers that the primary question the CMA needs to answer is whether it is accounting for debt that was legitimately and efficiently incurred by each of the Disputing Companies.

(4) As set out below, the CMA's proposed approach in its Working Paper would result in the disallowance of the costs of such debt incurred by Anglian in the period 2000-2005, without the CMA having set out any evidence to suggest that the debt was not efficiently or legitimately incurred.

(5) Whilst Ofwat has sought to take aim at the legitimacy of securitised structures throughout PR19 and the Redetermination process, Anglian has provided evidence to the CMA that its structure is resilient, robust to shocks and provides benefits to customers. The CMA has not suggested otherwise. Yet, if the Working Paper approach is maintained, Anglian would effectively be penalised by c.£100m, an amount that is in line with the highest penalties ever levied on any water company for any offence. This would also be a penalty levied nearly 20 years after the event, just for issuing long tenor debt that was in line with regulatory guidance of the time, and raised at a cost that was lower than prevailing market rates at the time. This cannot be seen as a proportionate approach.

(6) Chapter B sets out in detail how the CMA's proposed approach to the cost of embedded debt is vitiated by errors. The rest of this section considers the practical impact of the approach and the remedy required to limit its effects.

[1] REPCOC001 'Additional Points on Cost of Debt'.

[2] REPCOC002 Gregory et al 'Notes on the simulation exercise'.

2.1 Practical impact of the CMA's proposed approach

(7) The CMA's proposed approach to the cost of embedded debt represents a major shift from its position at the PFs. In particular, it now proposes a 15Y trailing averaging to estimate the cost of debt, compared to the 20Y trailing average used at PFs. The CMA states that it has considered evidence presented on "the use of debt issued in the period 2000-2005" and "the mix of debt instruments used by water companies", to conclude that the 20Y average approach may not accurately reflect the reality of a range of debt instruments now used by water companies, and may therefore be an inaccurate approximation for all efficiently incurred debt costs.[3]

(8) The practical implication of the proposed approach is that any Disputing Company which has legitimately and efficiently issued long term 20Y+ debt is now exposed to penalties, due only to the fact that rates have fallen since that debt was originally incurred.

(9) In Anglian's case, the approach would leave c.£100m of efficiently incurred embedded debt costs unfunded. The CMA has not engaged with the impact of its Working Paper position on Anglian or the other Disputing Companies, nor with the extensive evidence that Anglian has presented to demonstrate that its debt was legitimately and efficiently incurred.

(10) The CMA acknowledges that companies issue bonds at tenors at or above the 20-year average and that it "*may also be seen as opportunistic to disallow costs associated with the issuance of long-term debt on the basis that 'in hindsight' the market rates subsequently fell*"[4]. Anglian wholeheartedly agrees with this.

(11) Ofwat has argued that it is relevant that debt raised in 2000-2005 was used for "non-operational" purposes, consistent with its wider attack on companies with securitised structures. This was repeated in the Cost of Capital roundtable, where David Black asserted that companies "*have borrowed a lot of money to pay money back to the shareholders and that and the effect that they borrowed perhaps more than they should have, 15 to 20 years ago, which means they have a higher cost of debt today".*[5]

(12) Firstly, it should be noted, as Anglian has shown in its earlier submissions, that the debt it issued in 2002 was raised efficiently. As paragraph 3.1.11 of the KPMG Report of 31 March 2020[6] shows, the ABBB iBoxx benchmark as at 30 July 2002 was 6.52%. The observed cost of debt for new debt issued by Anglian in 2002 was on average 6.26%, 26 bps lower than the iBoxx index.

(13) The CMA has rightly noted that, while with the benefit of hindsight, this capital restructuring would be cheaper if conducted today "*it appears that Ofwat did not raise concerns about the use of non-operational debt at the time the debt was issued*".[7]

(14) In the August 2020 hearing, the CMA Panel asked questions about Anglian's re-gearing in 2002 and made clear it did not concern itself with the use of the debt issued: "*in 2002 the company issued three and a half billion pounds worth of bonds, invested 1.9 of it in the business and took 1.5 out of the group which they were entitled to do, that's not an issue we're in the least bit concerned about.*"[8]

(15) It is highly relevant that Ofwat did not raise any concerns at the time the debt was issued regarding its use and that it is unlikely that it would have raised concerns in PR19 had interest rates not fallen so dramatically since 2002. It strikes Anglian as wholly inappropriate, and indeed contrary to principles of

[3] Cost of Debt Working Paper, paras. 75-76

[4] Cost of Debt Working Paper, para. 68.

[5] Cost of Capital Roundtable Transcript, page 149.

[6] KPMG Embedded Debt Report, para 3.1.11 (SOC441CONF)

[7] Cost of Debt Working Paper, para. 70.

[8] Anglian Water August 2020 Hearing, para 75 lines 21-25

best regulatory practice, to retrospectively penalise the company in PR19 for a legitimate decision made in nearly 20 years ago. Such a change in approach would create uncertainty for investors who have a reasonable expectation that the regulatory framework will not be retrospectively amended. Regulatory policy can of course change, but the impact on regulated companies should be felt prospectively, with companies given the chance to respond to those changes. The CMA's proposed approach runs contrary to the principles of good regulation, in particular the principles of consistency and proportionality.

(16) Given this, it is puzzling and concerning that the CMA has now proposed to change its approach so materially from the PFs. It is also not clear what evidence the CMA has relied on implicitly to conclude now that debt issued by Anglian in 2000-2005 was not legitimately and efficiently incurred. The only alternative conclusion is that the CMA now believes that Anglian should have taken more interest rate risk at the point it issued its historical debt. However, this is a view that can only be reached by the CMA with the benefit of hindsight, and therefore amounts to retrospective regulation.

(17) Even if the retrospective penalty were considered appropriate and proportionate, compelling evidence would be required to justify this position. No such evidence has been presented by the CMA. By contrast, Anglian has clearly demonstrated that in its various submissions that its embedded debt is legitimate and efficient.

2.2 Remedies to limit the impact of the change in policy

(18) Anglian sets out below its principled objections to the CMA's proposed approach, which would create skewed incentives for companies in the future in that it would encourage the use of short-term debt, and transfer future risks to customers.

(19) For all the reasons it has set out in this response, Anglian requests that the CMA reverts to its PFs position of using a 20Y trailing average and considers fully its submissions as to how that should be calculated to derive an allowance for efficiently incurred historical debt.

(20) Should the CMA choose to maintain the broad approach set out in its Working Paper, which Anglian disagrees with, Anglian proposes that the CMA should recognise the scale of change it is proposing, and that steps should be taken to limit the impact of any retrospective changes in policy and risk allocation to reflect the movement in interest rates over time. This can be done by creating a glidepath that means that companies which issued efficient long-term financing in line with Ofwat policy at the time are not unduly penalised.

(21) This could be achieved by using a non-collapsing average when estimating the cost of embedded debt. This could approximate the effect of a 20Y trailing average and create a glidepath to the new methodology that will apply in the future. This could be designed to land within a cost of embedded debt range of 4.80% (consistent with the cost implied by the 20Y collapsing average in 2025 as well as the CMA PFs position, which would result in a substantial penalty for Anglian of around £35m) to 4.95% (Anglian's SOC position, which is still below Anglian's actual cost of debt).

(22) Such an approach would give time for companies to gradually and efficiently adjust to a new regulatory expectation that companies should in future take on more short-tenor financing, and deal with the issues that have emerged due to large market movements.

(23) A glidepath would also resolve the revealed problem of imposing an unjustified retrospective £100m penalty for financing decisions legitimately made in the early 2000s. It would recognise that debt was raised efficiently on market terms at the time of issue.

(24) Such an approach would be appropriate in the context of a redetermination, where the CMA can remedy the position for relevant disputing companies, with no impact on non-disputing companies.

(25) Anglian understands Ofwat's role to assist the CMA in the redetermination process. However, it is concerned to ensure this does not compromise the CMA's consideration of all the evidence before it, nor its duty to provide adequately reasoned decisions, in particular where there is such a marked departure in methodology between the PFs and the Working Paper, on such a high value item.

Chapter B: Cost of debt

1 Introduction

(26) This section focusses on the cost of debt and is structured as follows:

(i) Errors of principle

(ii) Errors of fact

(a) Errors in industry-wide actual cost of debt estimation

(b) Wrong data on matching principles

(c) Wrong data for EIB and floating

(d) New to embedded debt analysis proportion

(iii) Additional points on cost of carry, industry average costs, the ratio of new to embedded debt, the halo effect and the CMA's erroneous modelling of the RCV weighted collapsing average are set out in the appendix to this response[9].

2 Errors of principle in setting the cost of debt allowance

(27) The CMA recognised in its PFs that 20Y is the right investment horizon. It set out in its working paper why 20Y is appropriate noting that:

"companies issue bonds at tenors at or above 20-years, on average. Long tenors such as this seem appropriate in a long asset-life industry such as regulated water. On this basis alone, it would seem inappropriate to adopt an approach that prevented companies from adequately recovering these debt costs. It may also be seen as opportunistic to disallow costs associated with the issuance of long-term debt on the basis that 'in hindsight' market rates subsequently fell."[10]

(28) **Anglian agrees there are very good reasons why 20Y is the right investment horizon for setting the efficient cost of embedded debt under the benchmark-led approach including:**

(iv) the trailing average period is very sensitive because rates have moved so much over time (43bps variance implied by 15Y vs 20Y);

(v) water industry asset lives (average over 20 years) and the principle that revenues and costs should be linked to the useful economic lives of the assets, in line with standard infrastructure financing and past regulatory guidance; and

(vi) consistency with assumed maturity in the benchmark index over time (also approximately 20 years) to support cost recovery of each bond to maturity. Changing the benchmark has significant consequences as it creates significant risk exposures.

(29) However, the CMA has instead now proposed to move to a 15Y trailing average on the basis that companies now use a range of financing tools, a number of which are priced on the basis of being shorter-term than average water sector bond issuances. The examples cited by the CMA are the use of floating rate debt and EIB financing, which together with lumpy issuance patterns and shorter-tenor issuance, mean that the actual weighted average years to maturity of debt in the sector is c.13-14 years – considerably shorter than 20 years.

[9] See REPCOC001 Additional Points on Cost of Debt

[10] Cost of Capital Working paper para.68

(30) Companies issuing material floating or short dated debt took specific risk positions not reflected in the notional company at their own risk; the risks and the 'bets' taken have resulted in lower costs based on how markets have moved. However, the fact that some companies have benefitted from material market movements does not and cannot imply that these companies are better at financing (which CMA's argumentation implies). There is no efficiency revealed *ex post*: this "efficiency" is as a result of luck.

(31) The CMA considers 15Y to be correct, however crucially this is on an *ex pos*t basis and with the benefit of hindsight as identified by the CMA in the PFs. The cost of embedded debt has to be set based on *ex ante* principles.

(32) Moreover, the matching principle is by definition a retrospective form of regulation that seeks to approximate features of actual company financing that have come to pass after the point in time when the historical debt was incurred. The implication of using a 15Y trailing average being is that all companies should have taken on more risk *ex ante* and issued shorter tenor or floating rate debt – this creates a race to the bottom and encourages risk taking by firms to avoid exposure to losses (e.g. where regulatory policy 'matches' riskier positions adopted by some companies over time).

(33) The 15Y benchmark is also based on the wrong empirical evidence:

(vii) The CMA decision to move to 15Y relies on wrong data as it uses industry average 'years to maturity' instead of using 'tenor at issue'. It is tenor at issue that governs pricing, and hence 'years to maturity' cannot be relied upon for calibration of a trailing average to calculate efficient costs for historical debt.

(viii) Moreover, years to maturity reflects the weighted average time outstanding across an entire portfolio so is not a good proxy for tenor at issue. If all debt has just been raised years to maturity would be equal to tenor at issue. However, in a mature portfolio (which includes older debt about to mature as well as new debt) by definition the average years to maturity will be lower than average tenor at issue. As a result years to maturity is the wrong measure to calibrate the trailing average period.

(ix) In general (assuming continuous debt issuance and tenor over time), the combination of new and old debt within a portfolio implies a tenor at issue that is double the yield to maturity at any given point in time.

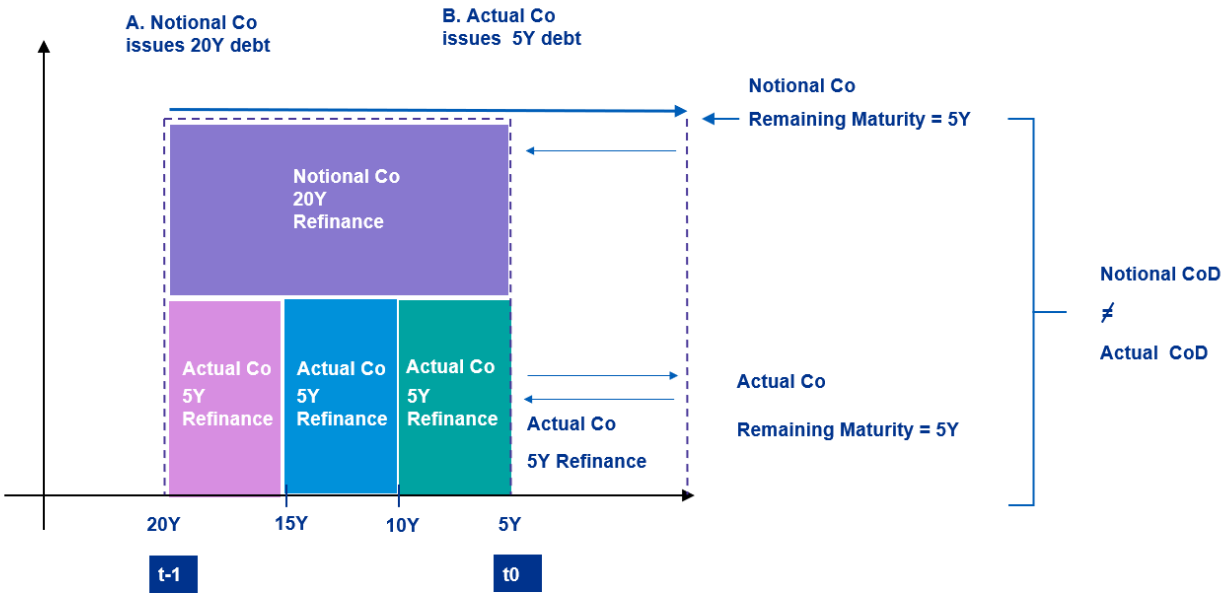
(x) On this basis 13-14 years to maturity across the industry would imply a 26Y trailing average period, not the 15Y adopted by CMA. Whilst an imperfect measure for calibrating the trailing average this clearly illustrates why 13Y-14Y is likely to under-state tenor at issue and how far back sector debt was raised in the past.

(xi) Anglian's analysis of fixed rate bond indicates average tenor at issue of 20Y across the sector, consistent with the tenor implied by the iBoxx benchmark. This is the conceptually correct starting point for calibration of the trailinFefficg average period.

(34) Figure 1 below sets out a stylised example to illustrate why years to maturity cannot be relied on for calibration of the trailing average period. It shows (a) the notional company which issued a 20Y bond 15Y ago in line with the iBoxx benchmark; and (b) an actual company which issued a short-dated 5Y instrument and refinanced every five years.

(35) At t-1 the years to maturity for the notional company is 20Y and the actual company is 5Y, where the years to maturity is equal to the tenor at issue. However at t0 (15Y later) the years to maturity for both companies is 5Y; this illustrates that years to maturity at a given point in time cannot be relied on for calibration of the trailing average period, as assuming a 5Y trailing average for both companies (which only 'looks back' 5Y) would miss relevant data points for the notional company which issued 20Y debt 15Y ago.

Figure 1 Stylised example to illustrate why years to maturity cannot be relied on for calibration of the trailing average period



(36) Further, the matching principle is inconsistent with the CMA's past approach to water sector cost of debt based on long term finance.

(37) The CMA's conclusions on embedded debt in the PR14 Bristol Water appeal were based on considerations of long-term finance. They did not include short-term or floating rate debt. Key considerations in relation to this were:

(i) a stable approach to the cost of capital over regulatory periods is consistent with investors making long-term financing decisions.

(ii) not including separate values for cash holding costs. To include an additional amount for such costs would be inconsistent with the notional financing cost analysis, which is itself based on a notional financing structure assuming long-term bonds only.

(iii) the CMA did not support Bristol Water's view that analysis of embedded debt costs should include an element of short-term debt, since the CMA's analysis was based on a review of WaSC bonds and the iBoxx index, neither of which included short-term debt.

(38) **The CMA's approach, which approximates actual company financing, is fundamentally inconsistent with Ofwat policy on the allocation of risk across companies and customers, which has not been reflected in the notional cost of debt in the past[11].**

(39) Ofwat considered in its 2016 consultation on the cost of debt whether to share risks with companies based on observed financial performance compared to the allowance. It concluded that this could transfer risk to customers and so it rejected the approach. Ofwat was clear that there are a number of reasons not to share apparent 'outperformance' driven by companies taking on different risk positions:

[11] Moreover, it excludes costs such as cost of carry which have been explicitly recognised by both Ofwat and CMA/CC.

(i) *The **allocation of risk between companies, investors and customers and how we set allowed returns are central** to determining customer bills and delivering good outcomes for customers.*[12]

(ii) *This approach means that **companies, their investors and management are responsible for their own financing** and capital structure and bear the risks associated with their choices. Placing this risk with companies incentivises companies to minimise their debt costs and ensures that customers are not responsible for funding inefficient financing structures.*[13]

(iii) *We recognise that the legitimacy of the regulatory framework is stretched… without the ability for customers to share in those benefits. **This is particularly the case where these benefits arise from unanticipated movements in the market …***[14]

(iv) *Risk sharing mechanisms may **weaken company incentives to manage financing risks** and **could expose customers to risks associated with companies' actual financing structures.** As companies determine their own financing arrangements, this means risk sharing might result in customers bearing the risk of inefficient financing decisions by companies. There is also the **potential for customers to bear downside risks from financing arrangements.***[15]

(40) The CMA's matching principle directly contravenes past Ofwat policy, which makes clear that sharing outperformance driven by actual company risk positions could transfer risks to customers, who would then bear additional costs in downside scenarios.

(41) More importantly the CMA has recognised that risk transfer to customers could occur through the use of retrospective 'with the benefit of hindsight' adjustments to the funding of embedded debt costs – this has been considered carefully by Ofwat. In using the 'benefit of hindsight' approach implied by the matching principle the CMA need to be aware they will be transferring risk to customers in future. Anglian does not believe this is good regulatory practice for a sector characterised by long-life assets.

(42) The matching principle is also fundamentally inconsistent with CMA's view that 'risks should sit with companies' as it implies that if rates increase in the future, allowances would increase by more than the benchmark to match actuals (which would be funded by customers).

(43) If a matching policy is applied, it is effectively sharing actual company risk with customers and cannot be seen as a one-way bet. At the moment it would capture the fact that the market is falling. But in future it would mean customers would be exposed to increases in interest rates (which must at some point come).

(44) The chart below sets out an illustrative example for (a) the notional company issuing long term fixed-rate debt in line with the iBoxx benchmark; and (b) an actual company issuing floating rate debt.

(45) At inception there is no difference in the implied cost. Initially interest rates are assumed to fall, and it appears that the actual company which issued floating rate debt is doing better compared to the long-dated issuance assumed for the notional company.

(46) However, assuming interest rates subsequently increase, this would imply that costs for the actual company that are then higher than the benchmark would (under a matching policy where regulatory policy matches actual financing) result in higher costs than the benchmark being borne by customers in the future.

[12] Ofwat, PR19 Cost of Debt consultation 2016, page 4 (SOC473).

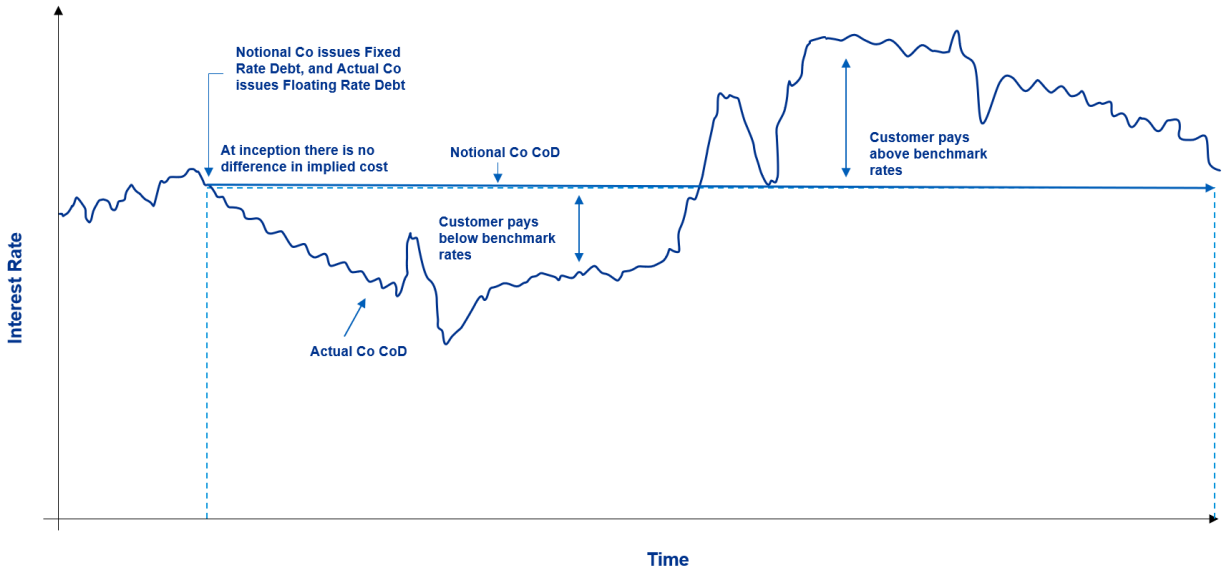
[13] Ofwat, PR19 Cost of Debt consultation 2016, page 4 (SOC473).

[14] Ofwat, PR19 Cost of Debt consultation 2016, page 35 (SOC473).

[15] Ofwat, PR19 Cost of Debt consultation 2016, page 36 (SOC473).

(47) As a result, Anglian considers long-term financing with stable costs to be in customers' interest as it implies (1) clear allocation of risk to companies; (2) stability of bills over time.

Figure 2 Stylised example to illustrate how approximating floating rate debt can result in more volatile costs and would transfer risks (including costs higher than the benchmark) to customers if reflected in regulatory policy



(48) **Ofwat's proposed approach is retrospective in nature and creates significant uncertainty and instability for remuneration of efficient debt costs over time**

(49) There does not appear to be a stable regulatory principle underpinning Ofwat's current policy for remuneration of embedded debt costs. Recent Ofwat statements suggest (1) the policy is determined *ex post* 'with the benefit of hindsight'; and (2) the policy is consistent over time. For example Ofwat stated at the roundtable:

(i) "*it seems a bit of a mistake to focus on just the length of time, rather than the result… our approach has changed over each price review period.*"[16]

(ii) *"we are not saying that the company should be adopting a 15 year trail or a 20 year trail on average… Companies then make their own choices around how they go about financing that, and we then, five years down the line, take a look at the data and we have a look and consider what is reasonable for the next period of price controls. I do not think we are saying 15 years is definitely right for PR24."*[17]

(50) This approach implies that, even when water companies issue debt at the most efficient cost available to them in the market at a given point in time, they are still exposed to significant risks of a mismatch between their (efficient) costs and regulatory allowances in the future.

(51) This risk arises from the fact that companies receive the cost of debt allowance that changes from one price control to next depending on (1) changes in market conditions; (2) other companies' financing strategies; and (3) discretion in regulatory policy when setting the allowed cost of debt.

(52) Ofwat suggests that the combined risk of the impact of these three factors should be allocated, in their entirety, to companies, despite the fact that individual companies have no control of these factors. However, companies should be able to recover efficiently incurred costs. It is not appropriate for the

[16] Cost of Capital Roundtable Transcript, page 47.

[17] Ibid, page 13.

regulator (retrospectively and with the benefit of hindsight) to deem debt raised in line with market benchmarks to be inefficient.

(53) This retrospective approach allocates too much risk to companies especially where there are large market movements and significant changes in regulatory policy over time – the implied risk exposure undermines financeability and is inconsistent with the cost of capital.

(54) **The CMA should set a regulatory policy that promotes long term asset financing in line with the sector's fundamentals.**

(55) If, instead, regulatory policy deviates from this approach, more companies would in future more often take on more risk through short-term approaches with more exposure to interest rate risk. This will require further shortening of maturities in regulatory policy in the future, ultimately leading to an unravelling of incentives for long-term financing, and leaving companies adopting a longer-term approach out of the money in the meantime. Ultimately companies would be prepared to take on more short-term risk in the knowledge the regulatory mechanism, based on the CMA's approach, would self-correct at future price reviews by passing crystallised risk and higher costs (in an increasing market) to customers.

(56) It might be reasonable to change policy and risk allocation *prospectively*, although Anglian disagrees with this policy as it transfers risks (i.e. exposure to changes in interest rates intra-price control is higher than under a benchmark approach) to companies on debt costs and will result in more volatile bills over time. All else equal this increases equity risk (which is not priced) and reduces the stability of the regulatory regime for investors.

(57) However, it is not reasonable to do this *retrospectively* as it unfairly exposes companies who have issued long term financing in line with both Ofwat and CMA policy to significant losses. Retrospective changes also create uncertainty for investors in the sector who should reasonably expect that the regulatory framework which they sign up to when investing will not be retrospectively amended, and is contrary to the principles of better regulation, in particular to the principle of consistency.

(58) This has material implications for the financeability of the notional company as (on an *ex post* basis) it exposes companies to market movements on efficiently incurred embedded debt. In the case of AW this is £100m of debt costs in AMP7 which will need to be funded by equity returns.

(59) It is not clear from the CMA's decision whether this is because CMA now considers (as market rates have fallen) that:

(i) the notional company should have taken on more risk (although at the time comments from Ofwat suggested companies should raise long term debt); or

(ii) raising debt at the iBoxx over time is not efficient.

(60) Anglian looks to CMA to be very clear about the basis of its decision. It believes the CMA should correct the position in its final redetermination so that:

(i) retrospective regulation is avoided;

(ii) an undue penalty, in Anglian's case of over £100m, is not levied against debt issuance that was legitimate and efficiently raised at the time

(iii) perverse incentives are not created for the future; and

(iv) risk vs the benchmark clearly sits with companies and is not transferred to customers.

(61) Anglian has summarised below the key errors of principle which underpin the CMA's departure from long term market benchmarks.

Table 1 Summary of errors of principle

Error	Rationale
Inconsistency between 20Y iBoxx benchmark selected and 15Y trailing average period implies wrong incentives	— The CMA's trailing average period is not matched to the tenor at issuance implied by the iBoxx benchmark, which is around 20Y (consistent with the investment horizon for the sector). As a result, a company issuing 20Y debt on a continuous basis cannot expect to recover costs equal to the yield at issuance across the maturity period of each instrument. — The CMA's policy incentivises companies to raise debt at shorter tenor than the benchmark as companies cannot expect to recover costs over 20Y and exposes companies which issued in line with the benchmark to losses
Matching principle transfers risk from the notional company to customers but CMA consider risk should 'sit with companies'	— The CMA does not appear to have attached weight to the implications of its 'matching principle' for short term and floating debt on risk for customers. — In a rising interest rate environment companies with short term or floating debt will incur costs above the benchmark which (if regulatory policy is consistently applied over time) would be passed onto customers, which creates an inter-generational reallocation of risk / transfer of equity.
Matching principle implies wrong incentives for companies to issue short term debt in a 'race to the bottom'	— The CMA's approach includes adjustments to shorten implied maturity, and will lead to more companies more often taking on the risk of adopting shorter term approach with more exposure to interest rate risk. This will require further shortening of maturities in the regulatory policy in the future, ultimately leading to unravelling of incentives for long-term financing while leaving companies adopting a longer-term approach out of the money in the meantime.
Matching principle creates uncertainty around future remuneration of debt costs and implies companies should be exposed to a combination of (1) market movements; (2) regulatory discretion	— Future allowances cannot be predicted ex ante (as this would require forecasting the debt strategy of each firm in the 'pool' and then matching the weighted average strategy), so it is not possible for a prudent firm to hedge the regime on an *ex ante* basis — CMA policy suggested in the Working Paper would imply that water companies should try to 'beat the market' on an *ex ante* basis. This creates material financing risk (and water companies are not hedge funds)

3 Errors of facts in setting the cost of debt allowance

(62) The CMA's position in the Working Paper is underpinned by a number of errors of fact, which are summarised in the table below.

Table 2 Summary of errors of fact

Error	Rationale
CMA rationale for selection of 15Y trailing average rather than the 20Y applied in the PFs is based on wrong data (13-14 years to maturity)	— The CMA decision to move to 15Y relies on wrong data as it uses 'years to maturity' instead of using tenor at issue (which governs pricing), and hence cannot be relied upon for calibration of the trailing average. — 13-14 years to maturity across the industry implies 26Y trailing average period not the 15Y adopted by CMA and supports need for 20Y trailing average. — The 17 years' average tenor quoted by the CMA based on the information provided by Ofwat similarly represents remaining maturity rather than tenor at issue. At the same time this data is out of date as it is from March 2015. — A shorter trailing average than the 26Y implied by the years to maturity data misses critical data points which make a material difference to implied cost of embedded debt
There are modelling errors in CMA's implementation of the matching principle which mean that its 40bps adjustment is too high (EIB, floating debt)	— If applying the matching principle, the impact of the adjustments (15bps floating and 5bp EIB debt) is materially lower than assumed by CMA (15bp-31bp and 12.5bp respectively): o The proportion of EIB debt assumed by the CMA is wrong (CMA estimates £7bn but only £5.3bn on company balance sheets at the beginning of AMP7) o The cost of EIB debt assumed by the CMA is wrong: CMA estimates 100bps are based on statements by Ofgem and Ofwat however are not supported by any empirical evidence. Benchmarking of water company EIB debt (60-70bps) indicates that 100bp is likely to overstate the impact of EIB issuance compared to the benchmark selected by CMA. o The proportion of floating debt assumed is wrong: the CMA is wrong to have relied on the simple average % floating debt to inform its assessment as this attaches weight to outlier companies which have material exposure to floating rate debt and adopted very different risk positions to that assumed for the notional company, and these outliers should not be taken into account. The median (6%) is consistent with the low end of the CMA's range, o Ofwat has explicitly rejected direct reflection of short-term floating debt in embedded debt in the past when looking at actual company costs. For example, Ofwat stated in response to Bristol's statement of case at PR14: we have made an allowance for the cost of holding cash 0.20% within our assessment of the actual cost of debt, consistent with Bristol Water's submission and the assessment of the Competition Commission in 2010. **We do not include these holding costs in our notional**

Error	Rationale
	cost of debt[18] as they are offset by the lower cost of short-term floating debt, which is not factored into our notional cost of debt. If an adjustment is considered for floating rate debt, an offsetting adjustment for cost of carry and holding cash is required (below).
CMA is wrong not to have carried out analysis of features of actual company financing which increase costs e.g. cost of carry	— The CMA does not take into account actual financing decisions which it considers could increase the cost of debt (gearing, index linked debt), but selectively matches features of actual company financing which reduce observed costs (short term, floating debt). — The CMA has not carried out detailed analysis of cost of carry for water companies, but this is needed if CMA is carrying out detailed analysis of actual financing. – An analysis of cash on company balance sheets indicates cost of carry of 9-18 bps[19]. This is in addition to the 4bps provided by Ofwat which only covers costs associated with liquidity facilities.
CMA analysis double counts the impact of floating debt on the notional cost of debt	— CMA assumes an adjustment in its calibration of the trailing average period for floating rate debt of 15-31 bps in its derivation of a 15Y trailing average. — However, the CMA also assumes that 20% of new debt (5% higher than the new debt % implied by a 20Y trailing average) and that this is raised at 2019/20 iBoxx. — This effectively double counts the impact of adjusting for floating debt on the overall cost of debt.
Errors in estimation of new to embedded debt ratio over-state the proportion of new debt across AMP7	— The CMA consultation also misapplies years to maturity in its analysis of the new to embedded debt ratio (as it assumes all sector debt will mature in 13.8Y i.e. 2034 when in practice only 50% of debt will have matured by this date). Correcting this gives new debt % of 11%. — Notional company analysis (consistent with the 20Y investment horizon and collapsing average methodology) implies 1/20th debt refinanced in each year of AMP7 i.e. 25% by 2025 equivalent to 12.5% across AMP7. After including the impacts of RCV growth and the assumed reduction in notional gearing from 62.5% in AMP6 to 60% in AMP7, the notional new debt ratio becomes 11.95%.
CMA is wrong to apply the collapsing average methodology in addition to a 15Y trailing average	— CMA is wrong to have applied a collapsing average to its 15Y trailing average as: o The CMA's approach is not internally consistent. Assuming water companies raised debt at the iBoxx benchmark (20Y tenor) there would be no refinancing of debt within AMP7. o This is corroborated by Ofwat analysis which shows that projected debt costs for the industry are flat from 2019/20 across AMP7.

[18] Ofwat Response to Bristol Water's Price Determination SoC dated March 2015, page 81, para.310.

[19] Depending on averaging methodology and whether 2019/20 or 5-year cash balances are considered.

Error	Rationale
	○ CMA's estimate is at the low end of its range for sector costs, but the low end is informed by different risk positions adopted by some companies
Material negative impact on notional company financeability has not yet been taken into account	— The CMA's adoption of a 15Y trailing average + collapsing average results in unfunded efficient costs. — This has significant negative implications as unfunded debt costs reduce projected metrics (in particular AICR) and notional company will not be able to achieve the target Baa1 rating. This corroborates position that the matching principle is not robust as it creates a financeability problem for the notional company. — The notional company is also not financeable from an equity perspective as equity will need to fund shortfall on embedded debt costs and equity will not be able to earn its required return on an expected basis.
CMA error modelling RCV weighted trailing average	— The CMA does not update the relative weights of individual years' debt issuances within the portfolio when the debt issued in the earliest year matures. — Effectively, the debt that matures is excluded in the calculation of interest but is still included in the debt balance which understates the overall interest rate on the portfolio. This materially distorts the cost of debt under the RCV-weighted collapsing average by c. 30 bps based on KPMG's modelling (4.55% estimated by the CMA vs 4.84% corrected).

Chapter C: Additional points on the Cost of Equity

1 The impact of Covid on equity beta

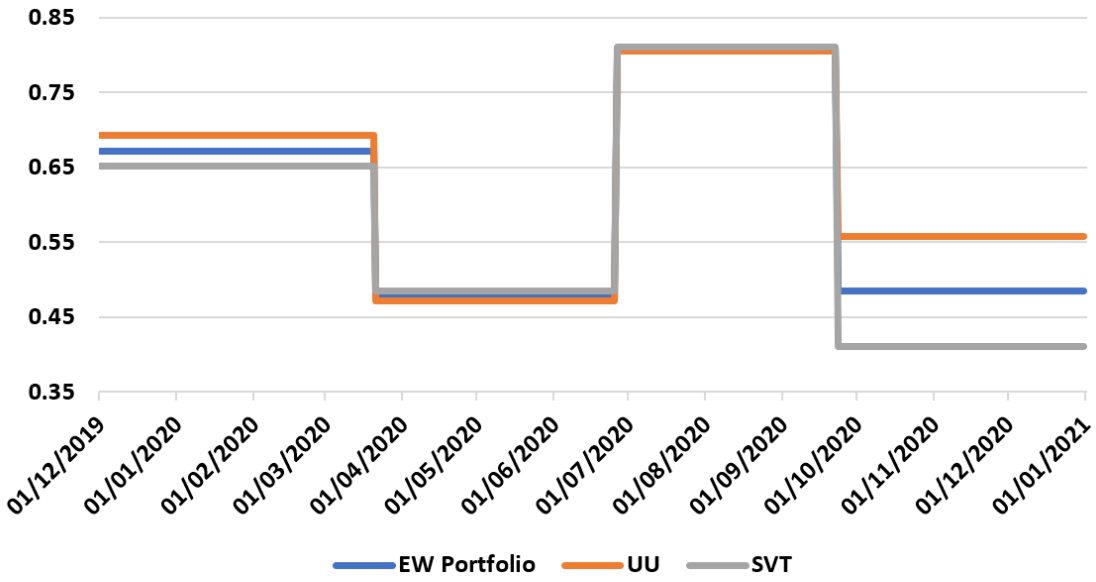
(63) Anglian's initial reply on 18 January 2021, contained detailed empirical evidence from Gregory, Harris and Tharyan (GHT-3) on the impact that Covid has had on beta estimates and how this should be factored into the long-run beta estimate, used in the allowed WACC.[20]

(64) Anglian is concerned by the CMA's lack of consultation on the impact of Covid on beta, in its cost of capital working papers. This lack of consultation implies that the CMA may simply ignore the issue and treat betas, estimated during the Covid period, as representative of the long-run beta of water companies when they are clearly not. The detailed exposition and empirical evidence demonstrating that this would be inappropriate is set out in GHT-3. However, Anglian summarises the main considerations below:

(i) The objective is to estimate the beta of the notional water company over a forward-looking 20-year investment horizon i.e. how are returns on water company shares expected to covary with the market portfolio over a 20-year period. This is necessary to ensure consistency with the CMA's other parameter estimates in the CoE.[21]

(ii) The Covid lock-downs have had a dramatic impact on empirical estimates of beta, as set out in Figure 3 below, which illustrates the volatility of beta since the first lockdown of March 2020.

Figure 3 OLS estimate (daily beta)



Source: AWS analysis of GHT-3

(65) The most likely explanation for the dramatic reductions in beta that is seen during the Spring and Autumn lock-downs is short-term changes in the market portfolio. In other words, that the behaviour of the market portfolio has changed during the lockdowns, such that the covariance of stocks with the market will change temporarily.

[20] Gregory, Harris and Tharyan, "The Evolution of Beta through the Covid Crisis", January 2021

[21] Indeed, it is unsound to combine a short-term or "conditional" beta with a long-term ERP.

(66) As the GHT-3 report sets out, lockdowns have not impacted the economy in a 'normal' fashion.[22] Rather, the government has imposed business closures and travel bans which have halted large swathes of the economy, whilst other sectors, particularly online businesses have soared.

(67) Lockdowns have therefore caused temporary changes in betas, which reflect a short-term change in the covariance of a stock, with the unusual 'Covid-market portfolio'. For example, as Professor Gregory pointed out in the Cost of Capital roundtable on 20 January 2021, the beta of IAG is currently 1.7 whereas 1-year ago it was 0.9.

(68) Therefore, the questions the CMA has to answer are:

(i) "How much weight should be given to the covariance of water company stocks with the Covid-market portfolio, for the purposes of estimating a long-run beta?"; and in turn

(ii) "How likely is it that further lock-downs (and therefore further situations where the market portfolio behaves like the 'Covid-market portfolio') will occur over the 20year investment horizon?"

(69) Whilst the answer to both of these questions is inherently a known unknown, the last global flu outbreak of a similar scale was Spanish Flu c.100 years ago.

(70) Despite this, if the CMA adopts 2-yr and 5-yr estimation windows, using data that encompasses c.1year (by the time of a February cut-off date) of the pandemic, the CMA would effectively be assuming that 50% (1yr/2yrs) or 20% (1yr/5yrs) weight should be given to the Covid period. Further, both time windows would assume that lock-downs are likely to be a frequent event over a 20year investment horizon. These inherent assumptions are hard to defend.

(71) GHT-3 submits that the CMA should disregard the Covid period and use the period between October-2014 and February 2020 to estimate beta – which is the period between the September 2014 structural break and the start of the Covid pandemic.[23]

(72) However, even if the CMA does not disregard the Covid period, at the very least, less weight should be given to time windows where markets were subject to the Covid pandemic for a large proportion of the period. The CMA could achieve this by placing more weight on the long-run beta estimates since 1991.[24]

2 Use of non-overlapping returns in TMR

(73) The CMA's lack of further consultation on the appropriate averaging technique when estimating the TMR, suggests that it will not be taking into account non-overlapping returns. This is surprising given that the advisors for Ofwat and for the Disputing companies concur that these are one of the most important TMR estimators. For example:

(i) Europe Economics use the arithmetic average of 10 and 20 year periods (comparable to the 1- and 20-yr non-overlapping return estimates), in their expert report for Ofwat on estimating the Cost of Capital for PR19.[25]

[22] GHT-3, para 5

[23] GHT-3, para 5 and pp. 5-6

[24] GHT-3, para 8 and pp. 5-6

[25] Europe Economics, "The Cost of Capital for the Water Sector at PR19", pp. 29-31 and Table 4.2; Europe Economics "Initial Assessment of the Cost of Capital", 31 July 2017, pp. 16-18

(ii) KPMG[26] and Oxera[27] have presented detailed evidence as to why non-overlapping returns are appropriate.

(iii) Wright and Mason consider that the literature on serial correlation has 'considerable controversy' and that regulators should continue to estimate TMR using historical averages.[28] This is relevant because one of the key benefits of the non-overlapping returns estimators is that they are assumption free regarding serial correlation and the distribution of returns.[29]

(74) Anglian does not repeat the arguments here but invites the CMA to re-read the relevant sections of these submissions (referenced above).

3 Use of Brennan Model for the Risk Free Rate (RFR)

(75) The CMA did not consult on the approach to RFR in its cost of capital working papers.

(76) However, given the importance of this parameter for the overall CoE and the new precedent that is about to be set by the CMA, Anglian note the following:

(iii) The substantive comment on the CMA's PFs from Ofwat and its advisers, was that the identity of the marginal investor in water mattered for the application of the Brennan model.[30] As explained by KPMG and Professor Alan Gregory in the Cost of Capital roundtable, this argument is wrong.[31] When applying the CAPM, the marginal investor concept is economy-wide, not investment specific. Anglian notes that this issue appeared to be agreed at the Cost of Capital roundtable on 20 January 2021.[32]

(iv) The CMA's approach in the PFs of defining the risk-free rate as i) the return required on a 'zero beta' asset – and ii) a rate that market participants can borrow and lend at, remains appropriate. Indeed, these criteria should be non-controversial, as they are grounded in corporate finance theory. Ofwat and its advisors to do not appear to challenge the CMA's RFR criteria.

(v) The CMA's PFs approach of placing weight on ILGs and AAAs meet its aforementioned criteria. However, it continues to reflect a spot rate, rather than a rate that is expected to prevail over the course of the charge control.

(vi) The upper end of the CMA's range is supported by the equilibrium RFR estimate, derived using the BoE's R* methodology and current yields on long-term US TIPS.[33]

[26] Anglian Water, "Response to the Provisional Findings", 27 October 2020, para 387; KPMG, "A reply to the CMA's approach to the cost of equity in the NATs Provisional Findings", 15 April 2020, para 1.2.11 (REP20); KPMG, "Cost of Capital for PR19", Technical Appendix 1 (SOC422).

[27] See for example - Oxera, "The cost of equity for RIIO2: Q3 2020 update", September 2020, pp. 18-19 and Table 2.7 https://www.northerngasnetworks.co.uk/wp-content/uploads/2020/09/CoE-Oxera.pdf

[28] Wright and Mason, "Comments on ENA/Oxera", 5 November 2020, para 2.15

[29] See for example - KPMG, "A reply to the CMA's approach to the cost of equity in the NATs Provisional Findings", 15 April 2020, para 1.2.11 (REP20); Anglian Water, "Response to the Provisional Findings", 27 October 2020, para 387

[30] See for example – Ofwat, "Reference of the PR19 final determinations: Risk and return – response to CMA provisional findings", October 2020, para 1.2.1

[31] Cost of Capital Roundtable Transcript, pages 101-102.

[32] This is unsurprising as the explanation under Figure 11.A1 is clear in Berk and DeMarzo (2014) "That is, the SML holds with some rate r* between rs and rB in place of rf. The rate r* depends on the proportion of savers and borrowers in the economy." [p441, 5th Edition]

[33] Anglian Water, "Response to the Provisional Findings", 27 October 2020, para 404; and https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=realyield Anglian Water, "Response to the Provisional Findings", 27 October 2020, para 404; and https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=realyield

4 Probability distribution of the cost of equity

(77) Anglian submit with this Response a short follow up on the CMA's CoE probability distribution analysis by Gregory, Harris and Tharyan (GHT-4).[34] This short note addresses one of the key issues with the CMA's modelled probability distribution in its Point Estimate for the Cost of Capital working paper – namely that the standard error for the beta was wrong.

(78) GHT-4 demonstrates that when a standard error for the beta, using the statistical outputs from the underling regressions is combined with the CMA's assumptions for the rest of the CoE, that the CMA is nowhere close to the 82nd percentile. This is consistent with the Anglian submission of 18 January 2021.

[34] Gregory, Harris and Tharyan, "A Simulation of the Cost of Equity for the Water Industry", January 2021 (REPCOC002)