



**YorkshireWater**

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**Final Response to CMA WACC  
Consultations**

**Paper 2(A): The Cost of  
Embedded Debt**

**27 January 2021**

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# 1. Executive summary

## 1.1 Overview

- 1.1.1 The CMA stated a definite preference in its PFs and in its Cost of Debt Working Paper for a benchmark-led approach to setting the allowed cost of embedded debt. Having settled on this position, it is vital that the CMA's chosen benchmark is now genuinely a benchmark – i.e. a realistic characterisation of the mix of debt that an efficiently financed company would have taken into the AMP7 regulatory period.
- 1.1.2 YWS cannot conceive of an economic rationale for a 15-year collapsing debt portfolio which cuts off all pre-2005 data and which progressively loses all memory of pre-2009 interest rates. As outlined in the 13 January Response, YWS's view remains that the CMA has arrived at this benchmark in error, because it misconstrued the anchoring that it should take from the "average number of years to maturity" data presented in companies' APRs.<sup>1</sup> It is critical that the CMA corrects this error.
- 1.1.3 To assist the CMA, YWS has, within this paper, set out a clear methodology that the CMA could use as a robust basis to construct a cost of embedded debt allowance in its upcoming Final Determination. This approach expands the CMA's PFs benchmark to include recognition of floating-rate debt, EIB debt and index-linked debt, thus addressing the CMA's concern that it may not have adequately captured the full range of instruments that water companies utilise.
- 1.1.4 YWS also shows that the proposed benchmark passes a cross-check to the actual industry cost of debt.

## 1.2 Outline of this embedded debt paper

- 1.2.1 YWS's detailed representations on the cost of embedded debt allowance are structured as follows:
- 1.2.2 **Section 2** details how there is a misconception within the working papers that materially impacts both the assessment of the cost of embedded debt and the calculation of the proportions of new and embedded debt. (N.B., this paper focuses on the cost of embedded debt. The impact on the proportion of new debt is addressed in an

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<sup>1</sup> YWS, Preliminary Response of 13 January 2021 to the Cost of Capital Working Papers (**13 January Response**), paragraph 3.1.6.

additional paper – see Paper 2(B) on the proportion of new debt to embedded debt.)

- 1.2.3 **Section 3** sets out an enhanced composite approach, as originally suggested within YWS's December 2020 Post-Hearing Submission, which expands the CMA's PFs benchmark to include recognition of floating-rate debt, EIB debt and index-linked debt, thus addressing the CMA's concern that it may not have adequately captured the full range of instruments that water companies utilise.
- 1.2.4 This enhanced approach results in a proposed **composite benchmark allowance of 4.82%**.
- 1.2.5 In **Sections 4 and 5** YWS shows how YWS's proposed allowance passes a cross-check to the actual industry cost of debt.

## **2. Material error when assessing the appropriate benchmark**

2.1.1 YWS's reading of the CMA's Cost of Debt Working Paper is that the primary reason for the CMA's decision to move from a trailing average period of 20 years to 15 years was the comfort that the CMA took from the apparent match between 15 years and the weighted average maturity data for the sector reported in APRs of 13 to 17 years.

2.1.2 In paragraph 69 of the Cost of Debt Working Paper the CMA notes:

*"In favour of a 15-year horizon when measuring the benchmark cost is evidence that companies use a range of financing tools, many of which are priced on the basis of being shorter-term than average water sector bond issuances. Examples of this are the use of floating interest rate debt and bank 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 c13-14 years – considerably shorter than 20 years."*

2.1.3 In paragraph 78 of the Cost of Debt Working Paper the CMA notes:

*"a 15-year average appears to be a better proxy for the range of instruments used by water companies (for example, long vs short tenors, differing weights of fixed and floating debt) and thus would provide a more accurate assessment of efficiently incurred costs than an unadjusted 20-year average. The current measure of average maturity using APR data is approximately 13 years, while Ofwat estimated the range of current maturities to be 13-17 years (see paragraph 33). This suggests that a 15-year average adequately meets*

*the CMA's objectives for a benchmark approach without the need for judgement or manipulation of data that would be inevitable with either an RCV-weighted approach or the application of an outperformance wedge."*

- 2.1.4 Within both of the above paragraphs the CMA has clearly misunderstood the average maturity data reported within APRs.
- 2.1.5 As outlined in YWS's 13 January Response, there is a material misinterpretation in the CMA's Cost of Debt Working Paper regarding "weighted average years to maturity" and "average maturity".<sup>2</sup>
- 2.1.6 The misinterpretation involves an "apples to pears" comparison of sector average maturity data (13 to 14 years in paragraph 69 of the Cost of Debt Working Paper, 13 to 17 years in paragraph 78) with the period used within the CMA's trailing average (15 years).
- 2.1.7 For the avoidance of doubt, an average maturity date of, say, 13 years means that roughly half of debt will mature in over 13 years, with the other half maturing in less than 13 years. In other words, in 13 years' time roughly half of the current debt will still be outstanding.
- 2.1.8 YWS is concerned that the CMA (and Ofwat) appear to have interpreted this as meaning that all of the debt will have been repaid after 13-14 years, and, hence, that its collapsing average should collapse to zero in a similar time frame. This is a mistake that must be rectified.
- 2.1.9 In attempting to justify the move to a 15-year trailing average, the CMA has materially understated the trailing average period that is required to match to the debt that companies have raised. This can be seen by looking at the vintage of debt that companies will be servicing during the AMP7 period. The CMA will recall that YWS highlighted in its PFs Response that the sector took close to £10 billion of pre-2005 debt into the current price control.<sup>3</sup>

**Table 1: Pre-2005 bonds by company (as at 31 March 2020)**

<b>Company</b>	<b>Amount, £ billion</b>
Anglian Water	2.3
Dŵr Cymru	1.6

<sup>2</sup> YWS, 13 January Response, paragraph 3.2.1(b).

<sup>3</sup> YWS, Response to the CMA's Provisional Findings of 29 September 2020 (27 October 2020) (the **PFs Response**) paragraph 3.3.12 and Figure 3.

Northumbrian Water	0.8
Severn Trent Water	1.1
Southern Water	1.3
Thames Water	0.9
United Utilities	0.9
Wessex Water	0.5
South East Water	0.2
South Staffordshire Water	0.1

*Source: KPMG spreadsheet provided to Ofwat and the CMA by Anglian Water on 7 October 2020.*

2.1.10 There is a further £12 billion of debt from the period 2005-09, almost all of which matures after 2025.

**Table 2: 2005-09 bonds by company (as at 31 March 2020)**

<b>Company</b>	<b>Amount, £ billion</b>
Anglian Water	1.4
Dŵr Cymru	0.2
Northumbrian Water	0.5
Severn Trent Water	1.0
South West Water	0.7
Southern Water	0.5
Thames Water	4.7
United Utilities	1.3
Wessex Water	0.6
Yorkshire Water	1.1

*Source: KPMG spreadsheet provided to Ofwat and the CMA by Anglian Water on 7 October 2020.*

2.1.11 As was pointed out at the 20 January roundtable event, the CMA's proposed 15-year collapsing average would give no recognition to the pre-2005 debt in **Table 1** and progressively lose all memory of the pre-2009 interest rates associated with the 2005-09 debt in **Table 2**.

2.1.12 On this basis, YWS continues to believe that the 15-year collapsing average is wrong and that the 20-year trailing average used by the CMA in its PFs remains the most appropriate measure. The CMA must therefore revert to the 20-year trailing average.

### **3. Composite benchmark approach**

#### **3.1 Composite approach**

3.1.1 YWS acknowledges the CMA's concern that a purely iBoxx-based approach may not properly capture the full range of instruments that companies use to finance their functions.

3.1.2 YWS agrees that a slightly different approach from the methodology that the CMA adopted in the PFs may therefore be merited in order to generate a credible benchmark for the cost of debt.

3.1.3 YWS does not agree, however, that a "matching adjustment" is the appropriate solution, as this amounts, in reality, to an "actualisation adjustment". Any attempt to backfit the cost of debt allowance to a target value would be a serious mistake for the reason that the CMA first identified in its PFs – i.e. it has been impossible for the CMA to work through and understand all of the industry's actual cost of debt data in the timescales for this redetermination. It follows that, if the CMA does not know with any real precision what the actual industry cost of debt is, it cannot reasonably know what a reasonable "matching adjustment" is. YWS refers the CMA to a further discussion of this point in section 3.3, below.

3.1.4 YWS considers that an expanded, composite benchmark of the type originally outlined in its December 2020 Post-Hearing Submission<sup>4</sup> provides the best available approach to setting the allowed cost of embedded debt. This entails:

- (a) identifying benchmark interest rates for the full range of debt instruments that companies use – i.e. fixed, floating, EIB and index-linked debt; and
- (b) weighting the benchmark interest rates for each of these different debt types into a composite cost of debt allowance.

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<sup>4</sup> YWS, Post-Hearing Submission (17 December 2020), paragraph 2.3.

3.1.5 YWS sets out below its calculation of the composite benchmark. YWS requests that the CMA factors the framework, the workings, and the proposed allowance into its Final Determination.

### **3.2 Composite benchmark indices**

3.2.1 YWS agrees with the CMA that the average of the A and BBB non-financial 10+ year indices is the appropriate core, starting benchmark (see paragraph 29 of the Cost of Debt Working Paper).

3.2.2 As noted above YWS also considers that the 20-year average used by the CMA in its PFs is the most appropriate trailing average period.

3.2.3 YWS then proposes that the CMA should include in an expanded composite benchmark the following benchmark interest rates for the following debt types:

*(a)* Floating rate debt: 2.53%, in line with the CMA's calculation.

*(b)* Index-linked debt: 5.17%, representing a 22bps uplift over the cost of fixed-rate nominal bonds to reflect the shift up that there was in the all-in cost of pre-2012 debt when the 'equilibrium' rate of annual RPI inflation moved up unexpectedly in 2012.

*(c)* EIB debt: a 75bps discount to above benchmark rates.

3.2.4 YWS has updated its previous analysis reflecting the above benchmarks, resulting in a proposed allowance of 4.82%, which is presented in **Table 3**, below.



**Table 3:** Composite benchmark index

Composite benchmark approach	Weighting	Interest rate	Weighted rate
Fixed	61.0%	4.95%	3.02%
Floating	3.0%	2.53%	0.08%
Floating (EIB)	3.0%	1.78%	0.05%
Index-linked	29.0%	5.17%	1.50%
Index linked (EIB)	4.0%	4.42%	0.18%
<b>Combined benchmark rate</b>	<b>100.0%</b>		<b>4.82%</b>

3.2.5 Annex 1 to this paper provides further details of the detailed calculations used within **Table 3**.

### **3.3 Errors within the CMA’s proposed “matching adjustments”**

3.3.1 Notwithstanding YWS’s concerns with a “matching adjustment” methodology (see paragraph 3.1.3), YWS notes that **Table 3** above would be consistent with a matching adjustment to the core iBoxx index benchmark of 13 bps (i.e. 4.95% - 4.82% = 0.13%).

3.3.2 This is smaller than the indicative figure of 40 bps that the CMA cites in its Cost of Debt Working Paper. YWS notes the following material errors with the CMA’s 40bps calculation:

(a) **The floating rate adjustment of 15-31bps is significantly overstated.** The top end of the CMA’s quoted range for the proportion of floating rate debt of 6% to 12% is based on sector average data. However, this simple average data is materially impacted by outliers. HDD, for example, represents only 0.1% of total sector debt, yet exerts a significant influence on the

average because its percentage of floating rate debt is relatively high at 54%. YWS believes the sector median of 6% is more representative of the notional company and hence the correct figure to use.

**(b) The EIB adjustment of 12.5bps is significantly overstated.**

The CMA's estimate that £7bn of EIB debt is outstanding, together with the use of net industry debt figures, overstates the proportion of EIB debt. KPMG's analysis for Anglian Water and Northumbrian Water shows that there was £5.3bn of EIB debt outstanding at March 2020 (8.9% of sector debt) which will amortise down to c£2bn (c4.0% of sector embedded debt) by March 2025, resulting in an average proportion of EIB debt of c6.5%. In addition, c40% of this debt is also floating, resulting in a double counting of adjustments.

Ofwat's estimate of a 100bp differential also appears to overstate the EIB pricing benefit and is not supported by evidence. As detailed in the Post-Hearing Submission YWS's own cost differential is only c25bp.<sup>5</sup>

A corrected sector proportion of 7% and a cost differential of 25bp-100bp results in an EIB adjustment of 2bp-7bp, significantly below the CMA's estimate of 12.5%.

**(c) As the CMA notes in paragraphs 122 and 123 of the Cost of Debt Working Paper, the proposed adjustment is negatively skewed and does not consider a number of potential positive adjustments to the notional benchmark. In particular, YWS would draw the CMA's attention to the higher all-in cost of pre-2012 index-linked debt vs pre-2012 fixed-rate debt following the shift up in RPI inflation, as detailed in **Table 1** and the **Annex** to this paper.**

3.3.3 Once the above errors have been corrected and double counting between floating-rate debt and EIB debt appropriately reflected, YWS calculates a potential "matching adjustment" of less than 20bps, as compared to the CMA's 40bps.<sup>6</sup>

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<sup>5</sup> YWS, Post-Hearing Submission (17 December 2020), Table 1.

<sup>6</sup> CMA, Water Redeterminations 2020 – Cost of Debt – Working Paper (the **Cost of Debt Working Paper**) (8 January 2021), paragraph 121.

## 4. Actual cross-check range

### 4.1 Summary

4.1.1 The CMA's Cost of Debt Working Paper gave a range for the actual industry cost of debt of 4.45% to 4.82%.

4.1.2 YWS agrees that it is important to cross-check the proposed benchmark cost of debt to actual data. But the cross-check should be exactly that: a cross-check. The task is simply to establish a plausible range of estimates for the actual industry cost of debt and verify that the proposed benchmark cost of debt falls within that plausible range.

4.1.3 YWS supports much of what the CMA has attempted to do when constructing its actual cost of debt range, but is concerned that the CMA has understated the true cost of debt by c15bps at the bottom end of the range and c10bps at the top end of the range. This is for two reasons:

(a) The CMA's costing methodology<sup>7</sup> attempts to adjust for liquidity facilities, but does so only partially, resulting in an understatement of the range.

(b) The CMA considers both mean and median cost of debt statistics, when the median gives a more accurate characterisation of the typical company in the industry. In addition, YWS considers that the most appropriate dataset should be centred around the median costs among specifically the WaSCs and large WoCs.

4.1.4 Reflecting amendments for the above issues, YWS calculates a revised **range for the actual cost of debt of 4.61% to 4.92%**, as shown by **Table 4**, below:

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<sup>7</sup> CMA, Cost of Debt Working Paper (8 January 2021), Table 2.

**Table 4:** Actual cross check analysis

Actual cross check analysis	CMA	CMA corrected by YWS
WaSC median	4.45% - 4.64%	4.61%
WaSC and large WoC's median	4.57% - 4.73%	4.72%
Total sector median	4.59% - 4.82%	4.92%

4.1.5 Further detail on the corrections that YWS considers that the CMA should make to its 8 January analysis is provided below.

## 4.2 YWS cross check range

### *Median*

4.2.1 Mean summary statistics are affected by outlier values (e.g. South West Water's very low cost of debt). YWS considers that the best characterisation of the typical company in the sector will be the median or middle company in the industry.

4.2.2 In addition, a WaSC-only dataset is inappropriate as a primary dataset, as it inconsistently excludes companies that are considered too large to have been provided with a small company premium.

4.2.3 YWS suggests that the relevant median statistics for the CMA to focus on in its estimation of the actual cost of debt are as set out in **Table 5**:

**Table 5:** Median costs of debt

CMA Table 2 methodology Median analysis	Median
WaSC's	4.41%
WaSC and large WoC's	4.52%
Total sector	4.72%

*Source: Table 2 in the CMA's Cost of Debt Working Paper – Ofwat APR data updated for 2018/19 debt type weights and CMA floating rate assumption.*

*Other required adjustments*

- 4.2.4 YWS agrees with the CMA that a 5-10bps upwards adjustment is required to the above figures to account for issues associated with using historical APR data for cross-check purposes, such as reflecting (i) the full inflation impact of all derivative costs; and (ii) variances in yield versus coupon in YWS's case, whilst noting other companies may have alternative adjusting factors.
- 4.2.5 YWS has previously detailed how an adjustment of at least 9bps is required to YWS's reported 2020 APR data to provide an appropriate estimate of the AMP7 cost of debt.

*Liquidity facilities adjustment*

- 4.2.6 YWS agrees with the CMA's findings that APR data at March 2020 is atypical and requires adjustment in order to give an appropriate cross-check range.
- 4.2.7 YWS believes the CMA's alternative weighted approach (as presented in Table 2 of the Cost of Debt Working Paper) provides the best starting point for the actual cross-check range as it attempts directly to correct for the atypical nature of 2020 APR figures. However, this approach still includes all liquidity facilities held at March 2019. YWS, for example, had £325m of drawn liquidity facilities included within the March 2019 APR figures the CMA has used.
- 4.2.8 As previously noted, liquidity costs are covered by a separate allowance. Therefore, in order to ensure a consistent comparison to the embedded debt allowance, all liquidity facilities should be excluded from the APR analysis.
- 4.2.9 As detailed in YWS's past responses,<sup>8</sup> YWS believes adjusting APR data from a gross basis to a net basis provides a reasonable proxy for the removal of all liquidity facilities.
- 4.2.10 **Table 6**, below, summarises YWS's revised calculation on a net basis, which shows a potential range of 4.52% to 4.96%, in comparison to the

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<sup>8</sup> See, for example: YWS, Reply to Ofwat's response to the CMA's provisional findings of 29 September 2020 (16 November 2020) (**Reply to Ofwat's PFs Response**), paragraph 2.6.7; YWS, Post-Hearing Submission (17 December 2020), paragraph 2.3.10 and Table 1.

CMA's 4.41% to 4.72% (before the 5bp to 10bp addition for other adjusting factors).

**Table 6:** YWS net debt approach

Company	Gross debt	Gross interest	Cash	Cash interest	Net debt	Net interest	Interest rate (net basis)
ANH	7,538	335	1,048	5	6,490	330	5.08%
WSH	4,124	182	613	3	3,511	179	5.09%
HDD	61	3	0	0	60	3	4.52%
NES	2,957	127	59	0	2,898	127	4.38%
SVE	6,199	223	15	0	6,185	223	3.61%
SWB	2,591	59	282	1	2,309	57	2.48%
SRN	3,679	190	129	1	3,550	189	5.33%
TMS	13,141	557	1,053	5	12,088	551	4.56%
NWT	8,302	270	542	3	7,760	267	3.44%
WSX	2,262	89	42	0	2,219	89	3.99%
YKY	5,592	266	248	1	5,344	265	4.96%
<b>WaSC total</b>	<b>56,447</b>	<b>2,300</b>	<b>4,032</b>	<b>20</b>	<b>52,415</b>	<b>2,280</b>	
<b>WaSC median</b>							<b>4.52%</b>
<b>Variance versus CMA approach</b>							<b>0.10%</b>
AFW	1,078	49	102	1	976	48	4.96%
BRL	381	18	10	0	370	18	4.87%
PRT	131	8	21	0	111	8	6.89%
SEW	1,067	52	13	0	1,054	52	4.97%
SSC	292	17	26	0	266	17	6.38%
SES	196	11	22	0	174	11	6.45%
<b>Whole Sector total</b>	<b>59,593</b>	<b>2,455</b>	<b>4,226</b>	<b>21</b>	<b>55,366</b>	<b>2,434</b>	
<b>Whole Sector Median</b>							<b>4.96%</b>
<b>Variance versus CMA approach</b>							<b>0.23%</b>

### **Conclusion**

- 4.2.11 The preceding analysis in **Table 6** indicates that a further 10-20bps adjustment needs to be made to fully reflect the adjustment required for liquidity facilities.
- 4.2.12 The figures in **Table 5** should therefore be uplifted by approximately 20bps, not the 5-10bps that the CMA identified in its Cost of Debt Working Paper.
- 4.2.13 Reflecting this adjustment results in a **cross-check range of 4.61% to 4.92%** as shown within **Table 4**, above.
- 4.2.14 The increase in the range of approximately 10-15bps versus that outlined by the CMA reflects, in particular, the full exclusion of liquidity facilities to ensure consistency with the separate liquidity allowance. This is important.
- 4.2.15 (N.B., within paragraph 3.2.1 of YWS's core Consultation Response, YWS also outlines that the liquidity allowance is likely understated.)

## **5. Use of actual costs as a cross-check**

### **5.1 Notional benchmark versus “actual average”**

- 5.1.1 YWS notes paragraph 177 of the Cost of Debt Working Paper, in which the CMA acknowledges it prefers a benchmark-driven approach. In paragraph 175 the CMA notes concerns with placing too much reliance on actual costs. YWS considers, however, that the CMA then contradicts itself by fixating unnecessarily on the precise positioning of the benchmark cost within the cross-check range.
- 5.1.2 YWS is concerned that the CMA is, in effect, placing undue weight on an unavoidably imprecise reading of the actual cost of debt, such that its approach can no longer be considered to be a benchmark-driven approach.
- 5.1.3 As set out above, the cross-check data should be used to sense-check that the proposed benchmark is appropriate. It should not be used as a basis to mechanically adjust the benchmark index, otherwise the approach can no longer be considered a true benchmark approach.
- 5.1.4 To correct this, the CMA should revert to the benchmark approach adopted within its PFs, with the cross-check being used as an overall check that the benchmark is appropriate.

### **5.2 Errors within CMA approach**

- 5.2.1 YWS considers that the CMA has made significant errors in the reasons it has given for adopting a point estimate at the bottom of the range. As detailed below, YWS believes there is greater justification for “aiming up” rather than “aiming down”.
- 5.2.2 The CMA’s key reasons for aiming down were:
- (a) the CMA states that some companies’ high actual gearing levels result in a higher actual cost of debt vis-à-vis the cost of debt that would be achieved by a notional company. This implication is incorrect as the CMA’s past analysis has shown that credit rating, not gearing, is the key driver of interest rates; and
  - (b) actual costs are expected to fall across the five-year period: the CMA has already addressed this point with its use of a collapsing average, and in any event, actual analysis has shown the impact to be immaterial (2-3bps).
- 5.2.3 Further detail on each of the above points is provided in the following paragraphs.

### ***Impact of gearing***

- 5.2.4 As YWS has explained within its past submissions, gearing does not, in and of itself, have a direct impact on interest costs. Interest rates are primarily dependent on the credit rating of the issuer; not its gearing level.
- 5.2.5 Ofwat continues to try to paint gearing as the key issue causing variations in the levels of cost of debt reported across the sector when this is plainly inaccurate. Indeed, YWS notes that elsewhere in its representations, Ofwat complains that actual industry debt is, if anything, skewed too heavily towards the top of an A and BBB range.
- 5.2.6 If companies have historically had a higher rating than the notional company, it would be reasonable to expect that actual costs will be lower than the benchmark. This supports aiming up within the cross-check range, rather than aiming down as the CMA has done.

### ***Costs are expected to fall***

- 5.2.7 The CMA has already accounted for the evolution of the cost of embedded debt over time by adopting a collapsing average. The CMA would be making an error if it allowed a second time for this effect in its selection of a point estimate from within the actual cost of debt range.
- 5.2.8 In addition, Ofwat's analysis of evolving sector actual costs over the five years of AMP7 shows there is no material decline in rates over the period, with the average rate for the AMP being only 2-3bps lower than the opening rate at March 2020.<sup>9</sup>

## **5.3 Conclusion: YWS's proposed cross-check**

- 5.3.1 YWS's composite benchmark results in a proposed allowance of 4.82%.
- 5.3.2 The proposed allowance of 4.82% sits at the top of the CMA's original cross-check range of 4.45% to 4.82% and squarely within YWS's corrected cross-check range of 4.61% to 4.92%.
- 5.3.3 Rather than seek to adjust the notional benchmark to a specific point in the cross-check range as the CMA appears to have done, YWS considers that the appropriate methodology is to understand why the

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<sup>9</sup> Ofwat's PFs Response – Risk and Return (November 2020), Table A1.1. WASC data shows average AMP7 rate 2bp-3bp lower than the rate at March 2020.



notional benchmark is at a particular point within the range and then assess whether that positioning can be considered reasonable.

5.3.4 YWS considers it reasonable for the proposed allowance to be squarely within its cross-check range for the following reasons:

- (a) As noted above the vast majority of debt within the sector has been raised at a credit rating of at least the notional level of Baa1, with a significant proportion actually being raised at an A3 rating. On this basis it is reasonable to assume that actual costs would be lower than the notional benchmark, supporting an allowance closer to the top of the range.
- (b) Companies have adopted different risk positions to the notional company, such as refinancing risk through short tenor debt or interest rate risk through increased proportions of floating rate debt. The risk premium associated with this refinance risk or interest rate risk is not included within the actual cross-check range.

While YWS's composite benchmark attempts to reflect some of the benefits of companies' financing choices, it is inappropriate for all of the risk to pass to customers; therefore it is reasonable to assume actual costs would remain slightly lower than the notional benchmark.

- (c) Determining an actual cross-check range is not an exact science. Despite best endeavours there will always be an element of uncertainty within the cross-check range; therefore, a notional benchmark at or above the mid-point appears reasonable given the asymmetry of consequences in setting the overall WACC too high or too low.

5.3.5 The factors above support an allowance in the top half of the range; therefore YWS's proposed allowance is considered reasonable.

5.3.6 YWS's composite benchmark allowance of 4.82% therefore passes the cross-check test.

### Annex – Composite index – further explanation

	<b>Notional index component</b>	<b>Reference value</b>	<b>Weight</b>
A	Fixed-rate debt	<p><b>4.95%</b></p> <p>The 20-year collapsing average yield of the iBoxx £ non-financials 10+ years A and BBB indices over the period April 2000 to March 2020.</p>	<p><b>61.0%</b></p> <p>Calculated as 100% minus the weights for non-fixed-rate debt given below.</p>
B	Floating-rate debt	<p><b>2.53%</b></p> <p>The 6-month trailing average of the iBoxx non-financials 10+ years A and BBB indices as at March 2020.</p>	<p><b>3.0%</b></p> <p>The CMA’s analysis of 2018/19 APRs shows that floating rate debt represented 6% (median) or 12% (average) of total sector debt. As noted in Section 3.3.2(a), the 12% average figure is significantly skewed by outliers; therefore YWS considers the median figure of 6.0% to be the correct figure to use.</p> <p>As noted in row D below, 3.0% of the 6.0% total floating-rate debt is assumed to be EIB debt, leaving 3.0% as non-EIB floating-rate debt.</p>
C	Index-linked debt	<p><b>5.17%</b></p> <p>YWS’s proposed reference value for the cost of index-linked debt uses the iBoxx calculation in row A.</p> <p>For debt issued before 2012, index-linked yields would have been 2.5% below nominal iBoxx values, reflecting then prevailing expectations around future RPI inflation.</p>	<p><b>29%</b></p> <p>33% of the debt in Ofwat’s notional PR19 balance sheet is index-linked debt.</p> <p>As per row E, 4% of this debt is EIB debt. The residual amount of non-EIB index-linked debt is therefore 29%.</p>

	Notional index component	Reference value	Weight												
		<p>To calculate the all-in cost of debt for AMP7, it is necessary to add expected RPI inflation of 2.9%, consistent with the CMA's long-term inflation assumption.</p> <p>Yields on debt issued after 2012 would have reflected current RPI inflation expectations of 2.9% - i.e. no adjustment to iBoxx values is required.</p> <p>A simple 20 year trailing average would result in a 24bps uplift as shown by the calculation below:  <math>5.19\% = (4.95\% + 0.4\%) \times (12/20) + 4.95\% \times (8/20)</math></p> <p>Adopting the CMA's collapsing average reduces the uplift to 22bps, resulting in a rate of 5.17% as shown by the table below</p> <table data-bbox="584 906 920 1066"> <tbody> <tr> <td>20 year</td> <td>5.19%</td> </tr> <tr> <td>19 year</td> <td>5.18%</td> </tr> <tr> <td>18 year</td> <td>5.17%</td> </tr> <tr> <td>17 year</td> <td>5.16%</td> </tr> <tr> <td>16 year</td> <td>5.15%</td> </tr> <tr> <td><b>Collapsing average</b></td> <td><b>5.17%</b></td> </tr> </tbody> </table> <p>Note: YWS considers that it would also be appropriate to add an illiquidity premium due to the lower market appetite / depth for index-linked debt vs nominal debt but for prudence has not included this within the proposed uplift above.</p>	20 year	5.19%	19 year	5.18%	18 year	5.17%	17 year	5.16%	16 year	5.15%	<b>Collapsing average</b>	<b>5.17%</b>	
20 year	5.19%														
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	<b>Notional index component</b>	<b>Reference value</b>	<b>Weight</b>
D	EIB floating-rate debt	<p><b>1.78%</b></p> <p>YWS does not recognise the claim that EIB debt is 100 basis points cheaper than public debt.</p> <p>YWS has examined its EIB borrowing and identified a discount of 25 basis points relative to iBoxx values on the date of issue.</p> <p>Within its composite allowance YWS has prudently estimated a discount for EIB debt of 75bps.</p> <p>1.78% = 2.53% - 0.75%</p>	<p><b>3.0%</b></p> <p>YWS does not understand Ofwat’s statement that there is £17bn of EIB debt currently outstanding in the water sector.<sup>10</sup></p> <p>App20 data provided by Ofwat for the sector shows that there was a total of £4.5bn EIB debt at March 2018. As the majority of this debt is amortising, the value would be expected to be lower at March 2020 (below 7.5% sector debt).</p> <p>KPMG’s analysis for AWL and NWL has shown EIB debt falling from 9% at the beginning of the AMP to 4% at the end of the AMP.</p> <p>Based on the above evidence YWS has prudently assumed EIB represents 7.0% of total sector debt.</p> <p>Based on the split of debt included within the App20 data YWS has split this as follows:</p> <p>3.0% floating-rate EIB debt</p>

<sup>10</sup> An examination of EIB’s website indicates that this amount is similar to the “signed amount” of EIB debt, totalling €18.7bn. The more relevant figure is the total amount of outstanding EIB debt. In YWS’s case, the total signed amount of €1.3bn would not be relevant to consider since the total outstanding amount of EIB debt for YWS at 31 March 2020 was £131m.

	<b>Notional index component</b>	<b>Reference value</b>	<b>Weight</b>
			4.0% index-linked EIB debt
E	EIB index-linked debt	<b>4.42%</b> As per row C less the same 75 basis points EIB deduction as per row D. $4.42\% = 5.17\% - 0.75\%$	<b>4.0%</b> As per the explanation in row D
		Weighted average = <b>4.82%</b>	Total = <b>100%</b>