WATER PR24 REFERENCES

Final Determinations Volume 4: Allowed return - chapter 7

10 March 2026

CMA
Competition & Markets Authority

Website: www.gov.uk/cma

Members of the Competition and Markets Authority Panel who conducted these redeterminations (the group)

Kirstin Baker *(Chair of the group)*

Ashleye Gunn

Juliet Lazarus

Paul Muysert

David Thomas

Chief Executive of the Competition and Markets Authority

Sarah Cardell

The Competition and Markets Authority has excluded from this published version of the final determinations information which the group considers should be excluded having regard to section 206 of the Water Industry Act 1991.

Any omissions are indicated by [✂]. Any non-sensitive replacement content is indicated in square brackets.

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Allowed return summary

7.1   This chapter sets out our approach to estimating, and our decisions on, the allowed return on capital.

7.2   The allowed return, multiplied by the RCV, determines the amount of allowed revenue which companies can recover from customers to ensure that debt and equity investors are appropriately remunerated for the risks of providing capital to the regulated businesses. The allowed return component in Ofwat's PR24 FD represented approximately 26% of the industry's total allowed revenue.[1]

7.3   The allowed rate of return is set with reference to a weighted average cost of capital (**WACC**). The cost of equity component of the WACC reflects returns required by equity investors, while the cost of debt component compensates for efficiently incurred costs of existing and new debt. The two costs are weighted in proportion to the debt and equity in a capital structure to give an overall WACC.

7.4   There is significant uncertainty around the expected cost of capital, and the true cost of capital is never observed. Put differently, realised returns on capital, in a given price control period, do not reveal what the true cost of capital was over that period.

7.5   Ofwat and the Disputing Companies had very different views on the right level of the allowed return, which contributed significantly to their different views on overall allowed revenues. In its PR24 FD, Ofwat estimated a 4.03% Appointee CPIH-real WACC. This represents an increase of 83bps from the CMA's allowance in the CMA PR19 Final Report and an increase of 107bps from Ofwat's PR19 final determinations.[2] All of the Disputing Companies argued that the increase since PR19 did not appropriately reflect latest market evidence on required returns for the sector.

7.6   The Disputing Companies included the following Appointee CPIH-real WACC estimates in their statements of case:

   (a)   Anglian: 4.86%;[3]

   (b)   Northumbrian: 4.51 to 4.66%;[4]

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[1] Ofwat (2024) Key Dataset 2 Costs, Past Delivery and Risk and Return data. Select 'Industry (without TMS & SRN DM)' on the 'Company selector' sheet. See 'Allowed revenue' sheet, J24 as a percentage of J30.
[2] At PR19 Ofwat and the CMA set a CPIH-real Appointee WACC of 2.96% and 3.20%, respectively. CMA (2021) PR19 Final Report, p1099, Table 9-37.
[3] Anglian SoC, pp189–190, Table 23.
[4] Northumbrian SoC, p156, Figure 52.

(c)   South East: industry Appointee WACC of 4.89%, and a South East specific WACC of 5.01%;[5]

(d)   Southern: industry Appointee WACC of 4.98%, and a Southern specific WACC of 5.15%;[6] and

(e)   Wessex: did not include a point estimate or range for the cost of capital in its statement of case, but it did use an Appointee WACC of 4.58% in its financial modelling, based on 4.52% wholesale WACC[7] plus a retail margin adjustment (**RMA**) of 0.055%.[8]

7.7   In the CMA PR24 PD, we set an Appointee CPIH-real WACC of 4.29% using market data up to 30 June 2025.

7.8   We have received a large volume of submissions on this topic from all parties. In this chapter, we set out the key themes from the submissions and explain how they have influenced our reasoning. However, while we have carefully considered all the points put to us in reaching our decision, we have not sought to respond to every single methodological or empirical point raised in submissions to us, including in the statements of case, the responses to the CMA PR24 PD, and in the numerous consultancy reports submitted on behalf of the Disputing Companies, Ofwat and third parties.

7.9   After considering the relevant evidence, we estimate an allowed return that we consider appropriately balances our duties under the Water Industry Act 1991. The allowed return used in a price control can have a material impact on the level of customer bills. Our aim is to provide an allowance that ensures appropriate levels of investment within the sector without overcompensating investors at the expense of customers. We have also considered the arguments presented to us by Disputing Companies that there should be company specific adjustments to the Appointee WACC in light of various company-specific circumstances. We do not consider that the circumstances of any of the Disputing Companies warrant a company specific adjustment to the Appointee WACC.

7.10   For our final determinations, we have used market data up to 30 November 2025 to estimate the WACC.[9] We conclude on an Appointee CPIH-real WACC of 4.20%. This is 17bps higher than the Ofwat PR24 FD Appointee WACC, but 9bps lower than our PD Appointee WACC, as set out in Table 7.1 below.

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[5] South East SoC, p82, Table 6.2 included the cost of equity estimate of 6.32%. South East referred to the KPMG report (KPMG (2025) Estimating the Cost of Capital for PR24, p19, Table 6) for the cost of debt and cost of capital.
[6] Southern SoC, p508, Table 12. The South East specific WACC includes an increase in the cost of embedded debt of 30bps.
[7] See 'RCV' sheet, rows 45–50 in Wessex's financial modelling.
[8] Wessex SoC, paragraph 10.12(f).
[9] In practice, since 30 November 2025 was a Sunday, for most data the cutoff date is Friday 28 November 2025, the last trading day of the month.

7.11 We note that there have been significant changes in market data since Ofwat's cutoff date of 30 September 2024. Real government bond yields have increased by around 90bps[10] and nominal corporate bond yields have increased by around 40bps. There have also been other changes (for example, movements in beta estimates and updates to total market return (**TMR**) data) which partially offset the increase.

7.12 Our methodology changes explain any remaining differences to Ofwat's WACC, with our methodology increasing the allowed return on equity (reflecting the higher risk of the sector in our view) but offset by a reduction in the allowed return on debt (reflecting higher expected inflation). We also set the wholesale WACC equal to the Appointee WACC, based on our view that there is no double counting of returns between the wholesale and the retail controls. This increases our wholesale WACC by a further 6bps compared to Ofwat's FD.

Table 7.1: CMA's WACC estimates compared to Ofwat's PR24 FD

CPIH-real	*CMA PR24 FD*	*CMA PR24 PD*	*Ofwat PR24 FD*
Notional gearing	55.00%	55.00%	55.00%
RFR	2.40%	2.49%	1.52%
TMR	6.95%	7.00%	6.83%
ERP	4.55%	4.51%	5.31%
Unlevered beta	0.295	0.31	0.28
Debt beta	0.100	0.10	0.10
Listed comparator gearing	55.24%	53.81%	52.29%
Asset beta	0.35	0.36	0.33
Re-levered equity beta	0.66	0.68	0.62
Cost of equity (mid-point)	**5.39%**	**5.60%**	**4.83%**
Aiming up	0.30%	0.30%	0.28%
Cost of equity Appointee[1]	**5.70%**	**5.90%**	**5.10%**
Cost of embedded debt	2.38%	2.38%	2.77%
Cost of new debt	3.78%	3.86%	3.74%
Share of new debt	28%	27%	24%
Additional borrowing costs	0.20%	0.20%	0.15%
Cost of debt	**2.97%**	**2.98%**	**3.15%**
Appointee WACC	**4.20%**	**4.29%**	**4.03%**
Retail margin adjustment	-	-	-0.06%
Wholesale WACC	**4.20%**	**4.29%**	**3.97%**

Source: CMA analysis; Ofwat (2025) PR24 final determinations Aligning Risk and Return - allowed return appendix, Table 1 (this 2025 version is a republished document from 2024). Note: totals in the table above do not always reconcile due to rounding.[1]The cost of equity point estimate is rounded to 1 decimal point.

7.13 We set out below a summary of our decision on each element of the allowed return.

(a) Cost of equity CAPM parameters:

(i) we estimate a risk-free rate (**RFR**) of 2.40%. We use a one-month average of a 20-year index-linked gilt (**ILG**) yield of 2.18% and an RPI-

CPIH 'wedge' of 21bps.[11] We do not make any other adjustments to the ILG yield;

(ii)   we set a TMR range of 6.7% to 7.2%, considering historical ex-ante and ex-post TMR evidence as well as historical ex-post equity risk premium (**ERP**) evidence. The lower end of our range is based on the historical ex-ante TMR estimate of 6.7%. The top end of our range is based on historical ex-post ERP estimate of 4.8%, which is added to the RFR of 2.4% to produce a TMR of 7.2%; and

(iii)   we set an unlevered beta range of 0.276 to 0.314. We estimate 3-year betas for Severn Trent, United Utilities and Pennon to inform the top end of our range. We estimate a 10-year portfolio beta for Severn Trent, United Utilities and Pennon, with Pennon added to the portfolio from 1 October 2021, to estimate the lower end.

(b)   We select a point estimate for the cost of equity of 5.70%, 30bps above the mid-point of our CAPM range. This is primarily to reduce the risk of the sector under-delivering on its large-scale capital programme needed to improve services and resilience, given the potential welfare implications of underinvestment. We also note that there is a relatively low debt-to-equity premium implied by the cost of new debt and the mid-point of our CAPM range.

(c)   We set notional gearing at 55% given that all parties, except one, did not propose a change, the minimal impact a change in notional gearing would have on the allowed return, and given that the decision on notional gearing to a large degree is a matter of regulatory judgement.

(d)   Cost of debt parameters:

(i)   we set a real cost of embedded debt of 2.38%. This is based on a nominal cost of debt of 4.84% and a long-term CPIH assumption of 2.40%. Our cost of embedded debt estimate is balance-sheet led. We rely on both 'all in' and 'actual-notional' estimates, and we adopt the same instrument 'inclusion criteria' as Ofwat to construct these estimates (ie excluding non-cross currency swaps). Our CPIH assumption is based on the OBR's long-term CPIH forecast;

(ii)   we set a real cost of new debt allowance of 3.78%. We use a one-month average of the benchmark cost of debt index (the average of the iBoxx A/BBB 10+ non-financial indices) to estimate the nominal cost of debt. We find that a +30bps adjustment to the benchmark remains

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[11] We estimate the RFR by using the Fisher equation RFR = (1+ 20Y ILG) * (1+ RPI-CPIH wedge) – 1.

appropriate. We use the 2.40% long-term CPIH assumption to derive the real cost of new debt;

(iii) we estimate the share of new debt to be 28%. The key driver of the increased estimate – as compared to the Ofwat PR24 FD – is updated assumptions for RCV growth;

(iv) we provide for an additional borrowing costs allowance of +20bps. To estimate this, we include (i) a +5bps estimate for issuance costs and (ii) a +15bps liquidity costs allowance, based on latest information on year-end cash balances held by companies; and

(v) taken together the various estimates produce an overall real cost of debt of 2.97%.

Context and methodology

Context

7.14 Ensuring that regulated companies can attract debt and equity capital at a reasonable cost is critical to enabling the companies to operate their businesses efficiently, and to deliver the investments needed to provide the appropriate level of service to customers.

7.15 We therefore understand the importance of appropriately calibrating the allowed return component of the overall allowed revenue in delivering these objectives. We maintain the established notional approach to setting the WACC.

7.16 We also observe that since the CMA PR19 Final Report, there have been growing calls for consistency in estimating the WACC across UK regulated sectors. In 2022, the UK government asked Ofwat, Ofgem and Ofcom to work together, through the UK Regulators Network (**UKRN**), to identify areas where there is already significant alignment in cost of capital methodologies and areas where further alignment could be achieved.[12] In response, the UKRN produced guidance on the cost of capital methodology in 2023. The UKRN noted that greater transparency and consistency in decisions should reduce the uncertainty associated with the final price control outcome and should allow for easier cross-sector comparisons. However, UKRN also noted that the guidance is not binding, and each regulator will continue to make decisions in accordance with its own statutory duties.[13] The IWC Final Report also included a recommendation for a

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[12] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p3.
[13] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p4. The regulators which are expected to have regard to the guidance include Ofwat, Ofgem, Ofcom, the Office of Rail and Road (ORR), Utility Regulator for Northern Ireland (UREGNI), and the Civil Aviation Authority (CAA) (after the end of CAA's H7 and NR23 reviews which were ongoing at the time).

common WACC methodology to be set for all UK regulated sectors. Defra, in its January 2026 Defra White Paper, said that alongside taking forward reforms to the water sector, it would also work across the UK government to ensure regulated sectors are treated appropriately and consistently by their regulators – including in how they set the cost of capital.[14]

7.17   In making our decision on the allowed return in these determinations, we have not been bound by the UKRN guidance. However, we are supportive of the general direction of travel towards greater consistency in cost of capital decisions.

7.18   Against this backdrop, in deciding on the appropriate methodology and in reviewing the evidence put to us, we had regard to the following principles in our determinations.

(a)   **Maintaining consistency**: consistency and predictability over time of regulatory WACC decisions is likely to have a positive impact on the overall attractiveness of UK water infrastructure to investors, which in turn might be expected to benefit customers (by allowing firms to secure low-cost finance). However, consistency does not mean methodologies should not evolve over time, to reflect changes in market conditions and/or practical developments in estimating the WACC.

(b)   **Reducing regulatory complexity**: the breadth and depth of WACC analysis continues to increase at each price review. While the WACC methodology should be theoretically robust, it also needs to be transparent and practicable to implement.

(c)   **Recognising uncertainty:** Given that the allowed return is a significant driver of allowed revenues, it has become common regulatory practice to estimate the overall WACC and its components to two decimal points. This practice risks creating an illusion that it is possible to estimate these components with this level of precision and potentially encourages an ever-longer list of adjustments for different parameters. However, there is significant uncertainty around the expected cost of capital. It is important to consider the evidence in the round, and it is generally desirable to limit the number of more subjective adjustments to the underlying market data.

7.19   In response to the CMA PR24 PD, various parties submitted that our approach was inconsistent with regulatory precedent and UKRN guidance,[15] as well as with reference to previous CMA decisions. We note that previous CMA decisions provide a useful reference point but are not binding on future CMA panels in future

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[14] IWC Final Report, p221. Defra White Paper, p29.
[15] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 1.4. Citizens Advice (2025) Response to CMA PR24 PD, paragraphs 3-4. CCW (2025) Response to CMA PR24 PD, paragraphs 2.9-2.10. Anglian (2025) Response to CMA PR24 PD, paragraph 66.

decisions. Approaches can evolve over time, in response to market conditions and new evidence. This does not undermine our desire for regulatory consistency. Our approach in these determinations balances out the consistency considerations with the principles of reducing regulatory complexity and recognising uncertainty set out above.

7.20　We respond to the specific points on inconsistencies in the sections on individual parameters; however we also observe that parties only tend to point out inconsistencies where such support their view or position. Therefore, the arguments on inconsistency need to be treated with some caution.

Methodology

7.21　The WACC is given by the following expression, where Ke is the cost of equity, Kd is the pre-tax cost of debt, and D and E are market values of debt and equity respectively:

$$WACC = K_e \frac{E}{(D + E)} + K_d \frac{D}{(D + E)}$$

We use the Sharpe-Lintner Capital Asset Pricing Model (**CAPM**) to determine the cost of equity. The CAPM relates the cost of equity (K_e) to the expected return on a risk-free asset (risk-free rate or r_f), the expected return on the market portfolio overall (TMR or R_m), and a firm-specific measure of investors' exposure to systematic risk (beta or β) as follows:

$$K_e = r_f + \beta \left(R_m - r_f\right)$$

7.22　The CAPM is an established methodology with well-understood theoretical foundations, and which makes use of observable market data as far as possible. The CAPM is used by all UK regulators, and was the framework used by Ofwat in its PR24 FD and by the CMA in all previous WACC determinations. We perform our own assessment of each of the parameters of this model, using up-to-date market data. We also consider market-based cross-checks in addition to the CAPM.

7.23　For the cost of debt, we estimate a separate allowance for the cost of embedded debt using data on companies' actual debt costs, and we estimate a separate allowance for the cost of new debt, using a benchmark index. This approach is reasonably well-established and was used by Ofwat in its PR24 FD and by the CMA in its PR19 Final Report. The cost of new debt allowance will be subject to an end of period reconciliation for changes in the benchmark index over the price control, consistent with PR24 and PR19 approaches. This means that where our cost of new debt allowance is different to Ofwat's due to changes in the

benchmark index, these changes (in the benchmark index) will flow through to all companies in the sector at the end of the price control.

Indexation of the cost of equity

7.24   We continue to set a fixed cost of equity allowance for the duration of the price control. While there was some consideration of indexing the risk-free rate component of the cost of equity during the PR24 process, Ofwat did not pursue this option in the end. We have seen limited support for indexation through our redetermination process (discussed in more detail in the Risk-free rate section below). A move to indexation would represent a relatively major policy change, which we consider is best implemented at the industry level.

7.25   Nonetheless, we consider that there could be benefits from indexation in future price controls, as it would reduce the risk of error in the allowed return. The implementation of risk-free rate indexation would require careful thought, as it would imply a transfer of risk from investors to customers.

Inflation and estimating the cost of capital in real terms

7.26   The real WACC is multiplied by each Disputing Company's RCV to calculate the allowed return element of revenues in each year of the price control. The RCV is also indexed by inflation in each year, and therefore the cost of capital is expressed in real terms. The measure of inflation used to index the RCV varies by regulated sector. In water, the Ofwat PR24 FD completes the move away from using RPI to CPIH, a process which started at PR19, with the RCV now fully indexed to CPIH. Therefore, all of our WACC estimates are quoted in CPIH-real terms.

7.27   In the following sections, many of our estimated metrics are presented in CPIH-real terms. In order to calculate these metrics, we need to deflate nominal input data and adjust RPI-real input data into CPIH terms.

7.28   This predominately impacts the cost of debt, where some debt statistics are only available in nominal terms (reflecting the fact that companies issue significant amounts of nominal fixed rate debt). There is also an impact on our estimation of the risk-free rate, where most market metrics are quoted in either RPI-real or nominal terms, and on our estimation of the TMR, where the available historical data is quoted in nominal terms.

7.29   In order to make these adjustments we are required to take a view on the most appropriate inflation assumptions.

Deflating nominal debt costs

7.30   The nominal yield on a fixed-rate bond reflects the market's expectations of inflation over the bond tenor (the time until the bond matures) at the time the bond is issued. These expectations will be relatively long-term, given the typical bond tenor in the water sector of around 15 to 20 years.[16]

7.31   Ofwat's approach to deflating nominal debt costs is to use a long-term inflation assumption. Provided this assumption is not systematically biased upwards or downwards relative to market's inflation expectations embedded in bond yields, this approach should ensure that companies are remunerated for efficiently incurred nominal debt costs over time. While it is possible to use different inflation assumptions for each debt instrument to capture changes in inflation expectations over time, it is standard practice to use a single estimate to deflate all nominal debt costs. We consider this to be a reasonable approach and continue to apply this approach in these determinations.

7.32   In other words, this means we need a long-term estimate of CPIH, consistent with the average tenor of the debt, rather than the price control period, to estimate a CPIH-real cost of debt. Although, as we will discuss in more detail in this section, until a few years ago, the inflation environment had been relative stable, with inflation over a given price control typically staying close to long-term targets and expectations.

7.33   In the CMA PR24 PD, we assumed a long-term CPIH of 2.4%.

7.34   For our final determinations we retain a long-term CPIH of 2.4%, as discussed below.

7.35   For the cost of embedded debt, we follow a balance-sheet led approach. Actual debt costs of water companies reflect a mix of nominal and index-linked (mostly RPI-linked, and some CPI-linked) debt. Consistent with Ofwat, we first convert the actual costs of index-linked debt (**ILD**) to nominal terms (using a RPI assumption of 2.9% and a CPI assumption of 2%), before deflating the total nominal cost of debt into real CPIH-terms.

Adjusting RPI-real gilt yields

7.36   The ONS has decided to align the calculation of RPI with that of CPIH from 2030. This means that ILG yields will effectively become CPIH-linked from 2030 and therefore in future regulatory decisions these yields can be used directly to proxy the CPIH-real RFR. However, until then we still need to adjust observed ILG yields for the expected difference between RPI and CPIH (the RPI-CPIH 'wedge').

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[16] Based on CMA analysis of 2024–25 APR data.

7.37   We rely on official forecasts and market-based measures to estimate the RPI-CPIH wedge, as described in more detail in the Risk-free rate section.

Estimating real total market returns

7.38   An important source of evidence in estimating the total market return are long-run historical realised stock market returns. These are available in nominal terms and require deflating into real terms. We discuss our approach in more detail under 'TMR (ie total market return)' below, but where possible we use inflation measures most closely aligned to CPIH to deflate historical data, given we are estimating a CPIH-real WACC.

Long-term CPIH inflation assumption

7.39   Sector regulators and the CMA have typically relied on externally anchored[17] inflation assumptions or inflation forecasts from official sources like the OBR and have not forecast inflation themselves.[18]

7.40   There are also market-based measures of inflation, derived from inflation swaps (transactions converting nominal payment streams into real terms). One issue with inflation swaps is that currently most swaps transactions are for RPI and CPI measures, rather than CPIH.

7.41   In this section, we start with an overview of the Ofwat's PR24 FD approach; we then present the latest available official inflation forecasts; followed by a summary of the parties' submissions, and finally our assessment and decision.

Ofwat's PR24 FD approach

7.42   Ofwat noted in its final methodology that it intended to continue to use a 2.0% CPIH assumption based on the following assessment:

(a)   CPI inflation has on average been close to Bank of England's 2.0% CPI target set in December 2003; and

(b)   CPI and CPIH have tracked each other closely over time.[19]

7.43   Ofwat maintained the 2% assumption throughout in the PR24 DD and in the PR24 FD. Ofwat noted that while it was not unusual for CPIH and CPI to diverge,

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[17] Such as relying on Bank of England's 2.0% CPI inflation target.
[18] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p13.
[19] Ofwat (2022) PR24 final methodology: Appendix 11 Allowed return, p6.

historically there was no tendency for one measure to be consistently higher than the other, and that the long-run difference between the two was relatively small.[20]

7.44   In the PR24 FD, Ofwat also considered medium term CPI forecasts from His Majesty's Treasury (**HMT**) and found that a 2% CPI assumption was broadly aligned with those forecasts.[21]

Latest official inflation forecasts

OBR's long-term CPIH forecast (2024)

7.45   The forecast published in October 2024 is the OBR's first long-term CPIH forecast. Composition of CPIH inflation is almost identical to CPI but includes owner occupied housing (**OOH**) costs and council tax (as set out in Table 7.2 below).

7.46   To estimate the long-term CPIH, the OBR combines its CPI inflation forecast (of 2%) with council tax and OOH forecasts. [22]

(a)   Its council tax forecasts are informed by known referendum principles, announcements by councils, and examining recent trends. For the years in which policy is not currently set, the OBR's policy-neutral assumption is that levels will grow by 4.8%.

(b)   The OBR forecasts OOH in line with CPI actual private rental inflation. The OBR finds that the long-run response of private rents to average earnings is close to one-to-one. The OBR assumes that in the long-run private rents will grow in line with average nominal earnings growth, estimated at 3.8%.

7.47   These assumptions together translate into a 0.4% long-term CPIH-CPI wedge.

Medium-term CPI and CPIH forecasts

7.48   Twice yearly, the OBR publishes its latest economic and fiscal outlook. Since October 2024, the OBR has published two medium-term inflation forecasts which are presented in Table 7.3 below.

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[20] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, Annex 1: Deflation assumptions, p130.
[21] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, Annex 1: Deflation assumptions, p130.
[22] OBR (October 2024) Economic and fiscal outlook (accessed 20 August 2025).

Table 7.2: OBR medium-term inflation forecasts Economic and fiscal outlook March 2025 and November 2025

	March 2025			*November 2025*	
Year	CPI	CPIH	Year	CPI	CPIH
2025/26	3.2%	3.7%	2025/26	3.5%	3.8%
2026/27	1.9%	2.3%	2026/27	2.2%	2.4%
2027/28	2.0%	2.1%	2027/28	2.0%	2.1%
2028/29	2.0%	2.0%	2028/29	2.1%	2.1%
2029/30	2.0%	2.1%	2029/30	2.0%	2.1%
Average	*2.2%*	*2.4%*	**Average**	*2.4%*	*2.5%*

Source: OBR March 2025 Economic and fiscal outlook – detailed forecast tables: economy, Table 1.7; OBR November 2025 Economic and fiscal outlook – detailed forecast tables: economy, Table 1.7.

7.49   The OBR's March and November economic and fiscal outlook did not include an update to OBR's long-term CPIH assumption originally presented in the October 2024 economic and fiscal outlook.

Parties' submissions

7.50   All Disputing Companies have used a 2% CPIH long-term inflation assumption in their cost of capital submissions and did not raise any specific issues with this assumption in their statements of case.[23]

7.51   In response to the CMA PR24 PD, in which we used a long-term CPIH assumption of 2.4%, the Disputing Companies have provided various submissions to argue why this assumption is not appropriate, as set out further below.

Ofwat

7.52   In response to Disputing Companies' statements of case, Ofwat submitted that to the extent that the Disputing Companies have asked for the allowed return to be revisited, the recent evidence published by the OBR on long-term CPIH should also be considered when setting the allowed return.[24]

7.53   Ofwat submitted that the OBR's revised forecast of long-term CPIH-CPI wedge of 0.4% (rather than 0.0%) suggested that on a forward-looking basis the central estimate of long-term CPIH is greater than CPI. Ofwat submitted that if the long-term CPIH assumption (of 2.0%) was not changed (to 2.4%), this would have a direct benefit to equity returns.[25]

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[23] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraph 68, p25; KPMG (2025) Estimating the Cost of Capital for PR24, p100, footnote 225; Oxera (2025) PR24 Cost of equity estimation, p14.
[24] Ofwat (2025) Response to common issues on risk and return, paragraph 1.11.
[25] Ofwat (2025) Response to common issues on risk and return, paragraphs 1.63–65.

7.54   Ofwat submitted that there is a greater range of potential upward variation in the central forecast for long-term CPIH than the potential range of downward variation.[26]

7.55   In response to the CMA PR24 PD, Ofwat welcomed the CMA's provisional decision to use the OBR's long-term CPIH forecast of 2.4%.

7.56   Ofwat highlighted the importance of using inflation assumptions that are not systematically biased upwards or downwards considering the material impact incorrect inflation assumptions can have on profits when companies have fixed financing costs but revenues and RCV linked to inflation.[27]

7.57   Ofwat submitted three reasons why an expectation that over the long-term periods of inflation that varied from long-run expectations would be broadly balanced by other periods where the variation was reversed no longer holds.

(a)   Post 2022 inflation has been more volatile with continued risks of higher inflation. Such elevated levels of high inflation are less likely to be balanced by low inflation, which is likely to be more modest.

(b)   The official OBR long-run forecast is 2.4% therefore inflation post 2030 should not be expected to be lower than this on average over the long term.

(c)   Regulatory mechanisms may not mitigate this risk in the future. Ofwat noted that an approach of setting a nominal allowance for fixed-rate debt, as proposed by Ofgem, has received support for the mechanism in principle from gas companies and Citizens Advice and could be applied for water in the future. Ofwat submitted that should a nominal allowance for fixed-rate debt be applied in PR29, any windfall for companies in 2025-30 could not be counterbalanced by losses due to lower than expected inflation in future periods.[28]

7.58   Lastly, Ofwat submitted that CPIH inflation could be higher than 2.4% and CPI above 2.0% over AMP8. Ofwat noted that the OBR expects CPIH to be above CPI for the period to March 2030 and the latest Bank of England expectation is that CPI will be above 2.0% until 2027 before returning to the central forecast of 2.0% thereafter. Looking at the first five months of 2025/26, Ofwat noted that CPIH has been 4.1% compared to CPI of 3.6%.[29]

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[26] Ofwat (2025) Response to common issues on risk and return, paragraph 1.65.
[27] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 2.2–2.3.
[28] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 2.5.
[29] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 2.4.

Disputing Companies

7.59   The Disputing Companies submitted that the OBR's October 2024 forecast does not represent an expected long-term estimate to use in the regulatory WACC calculations.[30] All Disputing Companies (with the exception of Anglian) agreed that a long-term CPIH could be above the 2.0% CPIH assumption used by Ofwat in its final determinations but below the OBR's long-term CPIH forecast of 2.4%.[31] Relying on the work of three advisers,[32] Disputing Companies submitted that the highest CPIH long-term assumption that can be used is 2.1%, based on 2029/30 (Year 5) assumption of OBR's most recent medium-term forecast.[33]

7.60   The Disputing Companies' and their advisers' reasons not to rely on OBR's October 2024 long-term CPIH forecast fell into four broad categories, as set out below.

Lack of support for a 0.4% CPIH-CPI wedge based on historical data

7.61   Disputing Companies considered the outturn CPIH-CPI wedge over the period of January 1989 to August 2025 using the data published by the ONS.

7.62   Anglian and Southern submitted that the outturn data does not support the existence of a systematic CPIH-CPI wedge and across all long-term averaging windows the wedge is small or close to zero.[34]

7.63   Anglian's advisers, Oxera, submitted that historical outturn data points to a negative wedge at five-, ten- and 20-year averaging windows of -0.08%, -0.03% and -0.10% respectively.[35] Anglian noted that the OBR's estimated wedge is an

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[30] Disputing Companies (2025) Joint reply to Ofwat's Response, p27, paragraph 120. Anglian (2025) Response to CMA PR24 PD, paragraph 65, p20. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24. Northumbrian (2025) Response to CMA PR24 PD, paragraphs 284 - 311, pp84–91. Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009). Southern (2025) Response to CMA PR24 PD, paragraphs 7.15–7.24, pp132 - 134. South East (2025) Response to CMA PR24 PD, paragraphs 1.37, 6.31–6.39, pp11, 93 - 94. South East's Response to CMA PR24 PD, KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, November 2025, pp9–16. Wessex (2025) Response to CMA PR24 PD, paragraphs 8.4–8.5, p11.

[31] Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24. Northumbrian (2025) Response to CMA PR24 PD, paragraph 311, p91. Southern (2025) Response to CMA PR24 PD, paragraph 7.24, p134. South East (2025) Response to CMA PR24 PD, paragraph 6.35, p94. Wessex (2025) Response to CMA PR24 PD, paragraph 8.5, p11.

[32] First Economics, KPMG and Oxera.

[33] Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24. Northumbrian (2025) Response to CMA PR24 PD, paragraph 311, p91. Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009). Southern (2025) Response to CMA PR24 PD, paragraph 7.24, p134. South East (2025) Response to CMA PR24 PD, paragraph 6.35, p94. South East's Response to CMA PR24 PD, KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, November 2025, paragraph 3.5.1, p16. Wessex (2025) Response to CMA PR24 PD, paragraph 8.5, p11.

[34] Anglian (2025) Response to CMA PR24 PD, paragraph 543, p197. Southern (2025) Response to CMA PR24 PD, paragraph 7.16, p132.

[35] Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p9.

outlier across all historical data with a wedge equal to or exceeding 40bps occurring 13% of the time, historically.[36]

7.64   Northumbrian, using the same historical data, generated an average forecast of the CPIH-CPI wedge over a 20-year horizon using a Seasonal Autoregressive Integrated Moving Average (SARIMA) process[37] which can capture seasonal dynamics of the time series data.[38] Its analysis generated a mean wedge of 0.12% for the 20-year forecast (covering period from 2026 to 2046). Similar to Anglian's and Oxera's conclusions, Northumbrian found OBR's long-term CPIH-CPI wedge of 0.4% to be an outlier, and to be statistically implausible.[39]

7.65   Northumbrian submitted that its analysis demonstrates that the hypothesis of a zero long-term CPIH-CPI wedge cannot be rejected. It noted that should there be a strong basis for breaking with regulatory precedent and selecting a non-zero long-term CPIH-CPI wedge, and that there is no empirical foundation to support a wedge of 0.4%.[40]

OBR's CPIH-CPI 0.4% wedge is highly sensitive to forecast assumptions

7.66   Oxera submitted that the long-term 40bps wedge between CPIH and CPI is mostly driven by OOH growth (see Table 7.3 below) underpinned by long-run average earnings growth which is based on inherently hard to forecast labour productivity (see Table 7.4 below).[41]

7.67   Anglian and Oxera submitted that the OBR's CPIH-CPI long-term wedge of 0.4% is not sufficiently robust to be relied upon due to the wedge's high reliance on two key assumptions:

(a)   that OOH costs will grow on a one-to-one basis with average earnings; and

(b)   OOH and council taxes will grow at a rate nearly double that of CPI.[42]

[36] Anglian (2025) Response to CMA PR24 PD, paragraph 543, p197.
[37] SARIMA (Seasonal Autoregressive Integrated Moving Average) process is an extension of the ARIMA model designed to handle seasonal patterns in time series data. It incorporates both non-seasonal and seasonal components making it effective for datasets with periodic fluctuations.
[38] Northumbrian (2025) Response to CMA PR24 PD, paragraph 301, p89.
[39] Northumbrian (2025) Response to CMA PR24 PD, paragraph 303, pp89–90.
[40] Northumbrian (2025) Response to CMA PR24 PD, paragraph 304, p90.
[41] Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p6.
[42] Anglian (2025) Response to CMA PR24 PD, paragraph 511, p185. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, pp12–15.

Table 7.3: CPIH forecast decomposition

Parameter	Weight on CPIH	Forecast value
CPI	81%	2.0%
OOH	16%	3.8%
Council tax	3%	4.8%
CPIH		**2.4%**

Source: Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p5.

Table 7.4: Average earnings growth decomposition

Parameter	Forecast value
Labour productivity	1.5%
GDP deflator	2.3%
Average earnings	**3.8%**

Source: Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p5.

7.68   Anglian, Oxera and Southern additionally noted that the OBR indicated that it would 'keep [its] estimates and forecast methodology under review' with the OBR widely expected to downgrade its productivity forecasts for the period to 2030 in November 2025[43] which will have a reductive impact on the longer-term forecast.[44]

7.69   Anglian, Northumbrian, South East, Southern, and their advisers (First Economics, KPMG and Oxera) noted the OBR's own admission of its tendency to overestimate productivity forecasts.[45]

7.70   Northumbrian presented a comparison of the OBR's shorter-term estimates of productivity growth against actual productivity growth between 2009 and 2024 extending the work of Atkins and Lansley in their 2023 working paper.[46] Northumbrian submitted that this showed a material and persistent overestimation of the growth in productivity since 2009.[47]

OBR's long-term CPIH forecast is an illustrative projection and not a forecast

7.71   Based on the analysis performed by KPMG, Southern submitted that the CMA cannot rely on the OBR's long-term CPIH forecast because the OBR's long-term economic determinants publication is intended as an illustration to inform modelling by organisations inside and outside the UK government rather than an

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[43] Since Anglian's response to CMA PR24 PD, the OBR released its latest labour productivity forecast in November 2025, revising down its estimate of underlying medium-term labour productivity growth. This is discussed in further detail in chapter 4 (Base costs 'Frontier shift').

[44] Anglian (2025) Response to CMA PR24 PD, paragraph 546, p198. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p6. Southern (2025) Response to CMA PR24 PD, paragraph 7.22, p133.

[45] Anglian (2025) Response to CMA PR24 PD, paragraph 545, p198. Northumbrian (2025) Response to CMA PR24 PD, paragraph 309, p90. South East (2025) Response to CMA PR24 PD, paragraph 6.32, p93. Southern (2025) Response to CMA PR24 PD, paragraph 7.23, p133. Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009). Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 3.3.12–3.3.13, p14. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p18.

[46] Northumbrian (2025) Response to CMA PR24 PD, paragraph 296, p87.

[47] Northumbrian (2025) Response to CMA PR24 PD, paragraph 296, p87.

economic forecast.[48] Southern submitted that these long-run projections are insufficiently robust to underpin regulatory decisions.[49] Southern and KPMG therefore submitted that the twice-yearly Economic and Fiscal Outlooks fulfil the requirement of a fiscal economic 'forecast' and should be used instead of the long-term CPIH forecast published in October 2024.[50]

OBR's medium-term five-year forecast is more robust

7.72   All Disputing Companies (with the exception of Anglian) proposed that the CMA use Year 5 of the OBR's medium-term CPIH forecast instead.[51] Anglian suggested that the CMA maintains a zero CPIH-CPI wedge, reverting to a 2.0% long-term CPIH assumption.[52]

7.73   Using the OBR's March 2025 Economic and Fiscal Outlook, Northumbrian, South East, Southern and Wessex submitted that a CPIH-CPI wedge of 0.1% should be used for the redetermination, not 0.4%. They based their view on the OBR's five-year forecasts being legislatively considered as official forecasts and their analysis of historical CPIH-CPI wedge corroborating the OBR's 2029-30 Year 5 CPIH inflation forecast of 2.1%.[53]

7.74   KPMG submitted that using the Year 5 medium-term forecast is consistent with regulatory precedent considering that for RIIO-2 price controls, Ofgem used the latest OBR Year 5 forecast of CPI and RPI.[54]

7.75   First Economics concluded in its analysis that the basis to consider that CPIH will naturally increase faster than CPI inflation in the long-term is sound.

7.76   First Economics submitted that to assume that CPIH will equal CPI in the long run would require an assumption that council tax and owner-occupied housing costs will increase by only 2.0% per annum per average. For such assumption to hold would require an underlying assumption that:

(a)   pressures on local authority finances would cease in the future years; and

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[48] Southern (2025) Response to CMA PR24 PD, paragraph 7.19, pp132–133. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 3.1.4–3.1.8, p10.
[49] Southern (2025) Response to CMA PR24 PD, paragraph 7.19, p133.
[50] Southern (2025) Response to CMA PR24 PD, paragraph 7.19, p133. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 3.1.3, p10.
[51] Anglian (2025) Response to CMA PR24 PD, paragraphs 541, 542, 546, pp 197 - 198. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, p6.
[52] Anglian (2025) Response to CMA PR24 PD, paragraphs 543, 547, pp 197 - 198. Anglian's Response to CMA PR24 PD, Annex 20 Oxera (2025) Long-term inflation assumption in PR24, pp11, 15.
[53] Northumbrian (2025) Response to CMA PR24 PD, paragraph 311, p91. Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009). South East (2025) Response to CMA PR24 PD, paragraph 6.32, p93. Southern (2025) Response to CMA PR24 PD, paragraph 7.24, pp 134. Wessex (2025) Response to CMA PR24 PD, paragraphs 8.4 - 8.5, p11.
[54] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 3.2.2, p11.

(b)   either historical feed-through from earnings growth will significantly change; or the economy will no longer generate any real wage growth.[55]

7.77   First Economics concluded that currently more weight should be placed on the OBR's latest year 3/4/5 forecast and relatively little weight on the OBR's longer-term 'thought experiment'.[56] It supported its conclusion with four reasons.

(a)   All economic forecasts come with a margin of uncertainty and longer-term economic forecasts come with wider confidence intervals the further into the future the forecast relates to. First Economics argued that factors other than earnings growth (such as changes in interest rates and changes in the balance of supply and demand) can impact the ratio of prices to salaries. Because of uncertainties around multiple factors that can impact earnings growth, it is better to give greater weight to the OBR's medium-term forecast.

(b)   Some caution should be given to the use of OBR forecasts in relation to future productivity growth considering the OBR's historical forecast performance compared to the outturn.

(c)   The OBR has in the past re-calibrated the relationship between different inflation indices. Indices are revised and improved over time: using the revision of the long-term RPI-CPI wedge as an example, the RPI-CPI wedge was revised down from 1.4% in 2011 to 1.0% in 2015.

(d)   When deciding which inflation assumption to use in the context of setting an allowed level of return, it argued that the relevant consideration is what the investors' expectation is of the long-run CPIH inflation, and it would be a surprise if investors' expectations were instantly reset from 2.0% to 2.4% because of the OBR's publication.[57]

Third parties

7.78   The Energy Networks Association (**ENA**), Thames and Thames Investor Group made similar points to those raised by the Disputing Companies.

7.79   The ENA submitted that it disagreed with the CMA PR24 PD decision to use the OBR's long-term CPIH-CPI wedge.[58] The ENA does not believe that the OBR's assumptions used to calculate its long-term CPIH forecast are realistic, in particular the long-term productivity assumption.[59] The ENA submitted that it

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[55] Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009) p.3.
[56] Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009).
[57] Northumbrian's Response to CMA PR24 PD, First Economics, CPIH Inflation, 23.10.2025 (Earwaker Report 2025) (NWL-PD-REP-009).
[58] Energy Network Association (2025) Third party submission on the Water PR24 References, p1.
[59] Energy Network Association (2025) Third party submission on the Water PR24 References, p4.

supports the use of Year 5 of the medium-term CPIH forecast considering lack of historical evidence and lack of tried and tested CPIH forecasting methodology.[60]

7.80 Similarly, Thames did not agree with the CMA PR24 PD decision to use 2.4% as a long-term CPIH assumption.[61] Thames submitted that including a non-zero CPIH-CPI wedge as a long-term inflation assumption is a major departure from regulatory precedent.[62]

7.81 Thames submitted that both historical trends (using data between 2000 and July 2025) in CPIH-CPI wedge and forward-looking projections of the wedge (based on OBR's medium-term forecast) support an CPIH inflation assumption of c2.1%.[63]

7.82 Thames Investor Group submitted that overemphasising the OBR's 2.4% CPIH inflation forecast without triangulating against market data risked setting the regulatory real cost of debt too low and deterring investment.[64]

Our assessment and decision

7.83 In coming to a view on the appropriate CPIH assumption, we consider the following principles to be important.

(a) In a regulatory context, it is appropriate to rely on official inflation forecasts and/or market-derived inflation forecasts (if available). While these sources of evidence will be imperfect, we do not consider that sector regulators or the CMA are better placed to come up with their own inflation forecasts.

(b) Until the last few years, inflation has been relatively stable, with actual inflation rarely deviating from long-term targets. Therefore, it was reasonable to assume that any variations in inflation from the long-term target would broadly balance out over multiple price controls, and it was reasonable to 'look through' short-term fluctuations in inflation when estimating long-term inflation. This is no longer the case and we consider that the prevailing inflation environment has become a more relevant factor compared to previous price control decisions.

7.84 In this section, we first review the latest available official CPIH forecasts, we then comment on the specific issues raised by the parties, before concluding on our decision.

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[60] Energy Network Association (2025) Third party submission on the Water PR24 References, p5.

[61] Thames Water (2025) Third Party Submission on the Water PR24 References, paragraph 202, p36.

[62] Thames Water (2025) Third Party Submission on the Water PR24 References, paragraph 203, p36.

[63] Thames Water (2025) Third Party Submission on the Water PR24 References, paragraphs 204–208, pp36–38.

[64] Thames Investor Group (2025) Third Party Submissions on the Water PR24 References, paragraph 22, p9.

Lack of support for a 0.4% CPIH-CPI wedge based on historical data

7.85   We acknowledge the Disputing Companies' and their advisers' findings that historically CPIH-CPI wedge has tended to average at close to zero. Looking at all available inflation data provided by the ONS, since January 1998 to November 2025 (our cut-off date) the average CPIH-CPI wedge is 0.01%.

7.86   However, as the Disputing Companies suggest, we should stand back and consider to what extent historical trends in the CPIH-CPI wedge are still reflective of the existing and likely long-term conditions going forward.

7.87   It is relevant to consider both Ofwat's and KPMG's observations that post 2022 inflation has been more volatile.[65] Inflation has also been considerably higher than the Bank of England's 2% CPI target since 2022.

7.88   We broadly agree with First Economics that the release of the OBR's long-run forecast and its underlying logic prompts a question whether CPIH could reasonably be assumed to outpace CPI in the long run.

7.89   A review of the OBR's breakdown of the differences between CPI and CPIH provides reasonable justifications of why future CPIH-CPI wedge is unlikely to remain close to zero.

7.90   The positive wedge is driven by three key assumptions:

    (a)   that private rents in the long-run grow one-to-one with average earnings, consistent with the observed long-run historical relationship;

    (b)   that average nominal earnings growth would exceed CPI in the long-run (ie that real wage growth would be above zero); and

    (c)   that growth in council tax receipts would outpace CPI inflation.

7.91   While each of these assumptions may turn out to be wrong, overall, there seems to be sound basis to assume that CPIH inflation will be higher than CPI inflation in the long-term.

OBR's CPIH-CPI 0.4% wedge is highly sensitive to forecast assumptions

7.92   We observe that the OBR revised its medium-term total productivity growth down from 1.3% in March 2025 to 1.0% in November 2025,[66] and that productivity growth is assumed to be linked to earnings growth. However, the OBR has not

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[65] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 2.5, pp6–7. KPMG (2025) PR24 Final Determinations–risk analysis for a notional company, p38.
[66] OBR (November 2025) Economic and Fiscal outlook, p27.

revised its long-run CPIH-CPI wedge estimate, and the extent to which these revisions affect long-term productivity and earnings trends is difficult to assess.

7.93 As noted in the OBR's October 2024 economic and fiscal outlook, a revision to the earnings growth of 0.5 percentage points down or up would decrease or increase the estimated CPIH-CPI wedge by 0.1 percentage points.[67] Considering that the revision in productivity growth in the medium-term is below the 0.5 percentage points, the impact on the long-term CPIH-CPI wedge might be quite limited. We also note that the OBR still expects the productivity growth to rise over the forecast period.[68]

7.94 Overall, although estimating the long-term CPIH-CPI wedge is inherently uncertain, we still consider that officially produced forecasts are the best source of evidence in a regulatory context.

OBR's long-term CPIH forecast is an illustrative projection and not a forecast

7.95 The OBR's October 2024 long-term CPIH forecast was the first of its kind for CPIH. However, it was not the first long-term OBR inflation forecast. As regulators have started to transition away from using RPI to set price controls, the OBR's previous long-term forecasts of RPI-CPI wedge were relied on in previous regulatory decisions.[69]

7.96 The OBR included a clear explanation of its methodology to estimating the long-term CPIH forecast, which the Disputing Companies did not comment on. The OBR noted that its owner-occupied housing costs are informed by econometric equation and historical trends and the council tax forecast is based on the known referendum principles, announcement by councils and trends.[70] While any longer-term forecast is going to be more uncertain compared to shorter-term forecasts, they can still be given weight in a regulatory context.

7.97 Whether from a legislative perspective the OBR long-term CPIH forecast is a projection or a forecast only becomes relevant if there is a concern over how the long-run forecast has been estimated or if an alternative long-run forecast exists and a choice has to be made over which long-run forecast to use.

7.98 While it would be better to have more than one source of long-term forecasts, considering the OBR's overarching statutory duty is to assess and report on the long-term sustainability of the UK public finances,[71] we do not see the legislative definitions of what constitutes a forecast or a projection to be an impediment to

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[67] OBR (October 2024) Box 2.3: The long-run difference between RPI and CPI inflation, p39.
[68] OBR (November 2025) Economic and Fiscal outlook, p27.
[69] Ofwat PR19 FD Allowed return on capital technical appendix, p8. PR19 Final Report, p740, paragraph 9.18.
[70] OBR (October 2024) Box 2.3: The long-run difference between RPI and CPI inflation, p38.
[71] HM Treasury (Autumn 2024) Charter for Budget Responsibility, Chapter 4 The role of the Office for Budget Responsibility, p11.

accepting OBR's long-term forecast as a suitable reference point to be used in this redetermination.

OBR's medium-term five-year forecast

7.99   The Disputing Companies have argued that it would be more consistent with precedent and historical trends to use Year 5 of the OBR's medium-term inflation forecast as an inflation assumption in this redetermination.

7.100   It is generally accepted that the validity and the reliability of a forecast decreases as the forecasting period increases. However, the Disputing Companies did not present any evidence that the OBR medium-term CPIH forecast of 2.1% is likely to be more robust than the OBR's long-term forecast of CPIH of 2.4%.

7.101   In July 2025, the OBR published a forecast evaluation report to assess the accuracy of its forecasts against outturns and to reflect on reasons for any discrepancies.[72] The OBR found that its forecasts have been in line with outturn for one-year ahead CPI inflation while two- and five-year ahead forecasts have underestimated inflation by 0.3 and 0.5 percentage points respectively.[73] This highlights that there are also risks with relying on medium-term forecasts. We do not find Ofgem's RIIO-2 approach to inflation to be particularly relevant. In the latest RIIO-3 final determination, Ofgem decided to implement a partially nominal allowance for fixed rate debt.[74] This significantly reduces the impact of the long-term CPIH assumption on returns as it only affects a relatively small proportion of the allowed return (5.5% for electricity transmission, and 18% for gas, compared to 55% for water).[75]

Conclusion

7.102   Considering all the evidence in the round, we conclude the following.

(a)   There is sound basis to give weight to the OBR's long-run forecast, in the absence of other long-term forecasts and previous reliance on OBR's long-term inflation projections by regulators.

(b)   While the precise CPIH-CPI wedge is hard to estimate and is subject to uncertainty, there is sound basis to assume a positive wedge going forward.

(c)   Inflation has become more volatile and stickier in recent years. Both CPI and CPIH have been significantly higher than 2.0% and 2.4% respectively since

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[72] OBR (July 2025) Forecast evaluation report, p1.
[73] OBR (July 2025) Forecast evaluation report, p17.
[74] Ofgem (July 2024) Sector specific methodology decision – finance annex, p34.
[75] This is based on the proportion of index-linked debt for the energy networks in the notional capital structure: 10% of debt at 55% gearing for electricity transmission, and 30% of debt at 60% notional gearing for gas transmission and distribution. Ofgem (December 2025) RIIO-3 Final Determinations – Finance Annex, p11 and Table 16, p76.

2022, are expected to average out at 3.5% and 3.8% in the first year of this AMP and are both expected to exceed 2.0% and 2.5% over the price control period (see Table 7.4 above).

(d) Regardless of the approach to remunerating debt costs in future price controls, the assumption that inflation variations from long-run target broadly balance out over price controls may not hold. Therefore, using an inflation assumption which is notably lower than both the average expected inflation over the price control and the long-term OBR forecast is not justified, in our view.

7.103 Taking this evidence together, we consider that an assumption that inflation indexation of the RCV would be worth around 2.4% in the long-term is reasonable.

7.104 We therefore conclude that the most objective and fair approach to setting an CPIH assumption is to use the only available long-term CPIH forecast of 2.4% in this redetermination.

Notional gearing

Summary

7.105 We set notional gearing at 55% given the minimal impact a change in notional gearing would have on the allowed return, and the lack of evidence submitted by the Disputing Companies that a different level of notional gearing is a superior alternative.

Introduction

7.106 Gearing refers to the amount of debt within a company's capital structure. In the case of water companies, it is defined as net debt (debt minus cash) divided by the RCV of the company. In more general terms, gearing can be thought of as debt divided by the total capital base (debt plus equity).

7.107 Gearing determines the proportion of the cost of debt, and by implication the proportion of the cost of equity, within the overall cost of capital.

7.108 Both Ofwat and the CMA calculate the allowed return on capital with reference to a notional company with a predetermined level of gearing. This notional approach allows companies to make their own choices about their financial structure whilst ensuring that customers only pay for costs associated with the efficient cost of capital for a notionally structured company.

Ofwat's PR24 FD approach

7.109   Ofwat reduced the level of notional gearing from 60% at its PR19 final determinations to 55% at PR24 FD. Ofwat stated that the level of notional gearing would be set within a framework that reflected the need to:[76]

(a)   incentivise efficient financing choices given the balance of risk faced by water companies;

(b)   reflect the scale and nature of investment needs;

(c)   take account of a range of appropriate benchmarks and evidence; and

(d)   allow it to set a price control that is in the best interests of current and future customers.

7.110   Ofwat also noted that the period of high inflation during AMP7 provided the notional company (and many companies under their actual structures) the ability to reduce gearing ahead of 2025. Ofwat stated that signalling its decision in its final methodology, in December 2022, provided companies the opportunity to revisit and align their structures with the notional level ahead of PR24 should they wish to.[77]

Parties' submissions

Disputing Companies

7.111   Four[78] of the five Disputing Companies included notional gearing of 55% in their cost of capital estimates. Southern[79] was the only disputing company to deviate from Ofwat's 55% notional gearing assumption in its cost of capital submissions, including 60% gearing in its cost of capital estimates.

7.112   Southern noted that Ofwat had placed weight on companies' actual cost of debt to estimate the embedded cost of debt, and submitted that it should be consistent by placing weight on actual gearing levels in its assessment of gearing.[80]

7.113   Southern also stated that Ofwat was wrong to consider market evidence from enterprise value (**EV**) gearing of UK listed water companies, RCV gearing for GB energy companies and EV gearing for European energy companies in its analysis. Instead, Southern submitted that Ofwat should have placed weight on the RCV

[76] Ofwat (2022) PR24 final methodology: Appendix 10 Aligning risk and return, p27.
[77] Ofwat (2022) PR24 final methodology: Appendix 10 Aligning risk and return, p33.
[78] Anglian SoC, paragraph 676. South East SoC, Table 6.2, p82. Wessex SoC paragraph 10.10. Northumbrian SoC, paragraph 580. Wessex and Northumbrian reference to Kairos (2025) Setting the Allowed Return on Equity for PR24, Table 14, p61.
[79] Southern SoC, p502, paragraph 585.
[80] Southern SoC, p501, paragraph 575.

gearing of UK water companies and that this would not have supported the reduction in notional gearing.[81]

7.114   KPMG, South East and Southern's advisers provided a response to each of the points set out in Ofwat's PR24 FD.[82]

(a)   Efficient financing choices: KPMG argued that assuming a lower notional gearing cannot improve the company's overall financial position, with a constant level of business risk at both gearing levels, and instead a reduction in notional gearing transfers risk exposure from debt to equity.

(b)   Scale and nature of investment needs: KPMG stated that an assumed reduction in notional gearing all else equal, exacerbates the requirement for new equity capital and the scale of the equity financeability challenge. KPMG noted that it is inherently more difficult to attract and retain equity capital, compared to debt capital.

(c)   Appropriate benchmarks: KPMG noted that 55% sits materially below the average sector gearing, and Ofwat was wrong not to consider this when setting notional gearing. KPMG submitted that Ofwat was inconsistent in its approach to not using actual company data in setting the level of notional gearing, but it did use company data when setting the cost of debt allowance.

(d)   Impact of inflation: KPMG noted that higher than forecast inflation did act to reduce observed gearing in the sector, particularly in 2022, however KPMG stated that inflation has subsequently stabilised at close to Bank of England target levels and sector average gearing has increased. KPMG noted that there are other factors which exert upwards pressure on gearing, such as Return on Regulated Equity (**RoRE**) performance.

Third parties

7.115   MCC Economics, on behalf of CCW, retained a 55% gearing assumption in its cost of capital calculations but did not include any comments on Ofwat's methodology.[83]

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[81] Southern SoC, p501, paragraph 577.
[82] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 7.2.2.
[83] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, Table 1, p4.

Ofwat

7.116   Ofwat stated that it would support the CMA deprioritising the redetermination of the notional capital structure,[84] including notional gearing.[85] Ofwat noted that its position on notional gearing was set out in its PR24 documentation, and therefore it did not include any new material in its response.[86]

Our assessment and decision

7.117   Ofwat's 55% notional gearing assumption is a 5% reduction from its PR19 assumption of 60%. A 5% change in notional gearing is not unprecedented in water, and other regulatory, determinations. Since privatisation, there has only been one price control in water (PR99 with 50% notional gearing) which retained the notional gearing assumption from the previous price control. From PR04 to PR14, Ofwat increased notional gearing by 2.5 to 5% at each review. At PR19, Ofwat reduced notional gearing by 2.5% from 62.5% to 60%. In the PR24 final methodology, Ofwat signalled that it considered a need for a greater role of equity in the notional capital structure to ensure that the incentive based regime operates effectively, to reflect the strength of the incentives regime and to ensure companies are to maintain access to the significant levels of finance that will be necessary to deliver the projected capital investment programmes for 2025–30.[87]

7.118   The Modigliani-Miller theorem[88] sets out that a firm's cost of capital will be invariant to its level of gearing. This is due to a higher level of gearing resulting in a higher weight given to the cost of debt (which is cheaper than the cost of equity), but this reduction being offset by an increase in the cost of equity. We note that this is not always the case in practice due to other relevant factors. However, when assuming 60% notional gearing, instead of 55% in our WACC calculations, there is only a 0–1bps difference in our estimates at the bottom and top end of our range.[89]

7.119   We also consider the points set out by Ofwat in its PR24 FD on the rationale for a reduction in notional gearing and KPMG, South East and Southern's advisers', submissions. On the first three points (efficient financing choices, scale and nature

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[84] Ofwat sets an allowed return and tests financeability using an assumed capital structure for the notional company. Ofwat makes assumptions for notional gearing, share of index-linked debt, type of index-linked debt, dividend yield and equity issuance costs.

[85] Ofwat (2025) Response to common issues on risk and return, paragraph 3.13.

[86] Ofwat (2025) Response to common issues on risk and return, paragraph 3.17.

[87] Ofwat (2022) PR24 final methodology: Appendix 10 Aligning risk and return, p3.

[88] The Modigliani-Miller theorem suggests that as gearing rises shareholders of a company are exposed to more systematic risks (there is less of an equity buffer to deal with shocks), often measured as a rise in beta. This increasing risk to equity holders is described as a rising 'cost' of equity, in that higher returns are required to offset these higher risks.

[89] Using 55% notional gearing, our WACC range is 3.89-4.23%. Using 60% notional gearing, our WACC range is 3.89-4.2324%.

of investment needs and appropriate benchmarks) we note that these are all issues which require regulatory judgement.

7.120   With regard to inflation, all else equal, the higher than forecast inflation in AMP7 will have helped the companies reduce their levels of gearing in line with the 5% notional reduction assumed by Ofwat.[90] We recognise that during AMP7 other factors, such as operational performance, will have placed upwards pressure on gearing. However, Ofwat signalled at an early stage of the price review process that it intended to reduce notional gearing at PR24 FD. Companies have therefore had an opportunity to amend their capital structures and fund operational overspends through a mix of equity and debt. This was an approach taken by South East, whose shareholders injected £200 million of equity in May 2025 to reduce gearing below 65% and reinforce the financial stability of the company.[91]

7.121   Given the minimal impact a change in notional gearing would have on the allowed return and the fact that the change in notional gearing was signalled early on in the PR24 process we maintain Ofwat's assumption of 55% notional gearing as the basis of our cost of capital calculations and financeability assessment.

Allowed return on equity

Risk-free rate

Summary

7.122   We estimate an RFR of 2.40%[92] using the same approach used at the CMA PR24 PD. We base our estimate on a 20Y ILG yield of 2.18% and an RPI-CPIH wedge of 21bps. We make no further adjustments to the ILG yield. Our CMA PR24 PD RFR estimate was 2.49%.

Introduction

7.123   The RFR in the CAPM represents the rate of return expected by investors for holding a risk-free asset, ie the rate of return that an investor can expect to earn without taking any systematic risks.

7.124   RFR is a hypothetical number as no investment has absolutely zero risk. As a result, it has become common practice to use the expected return (usually termed

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[90] Gearing is measured as net debt divided by the RCV. The RCV increases in line with inflation. The amount repayable for existing index-linked debt also increases with inflation, but the amount repayable for existing fixed (or floating) rate debt does not increase with inflation. Therefore, for a company which holds any fixed or floating rate debt, higher inflation will result in a larger increase in the RCV than net debt, resulting in a reduction in gearing.
[91] South East (2025) Result of Equity Issue - 15 May 2025.
[92] We estimate the RFR by using the Fisher equation RFR = (1+ 20Y ILG) * (1+ RPI-CPIH wedge)–1.

'yield') on very high-quality debt instruments, often government bonds with strong credit ratings, as the best proxy for a risk-free investment rate.

7.125   In UK regulation, this has traditionally meant using the yield on an RPI indexed-linked government gilt (**ILG**) at a relevant maturity (time until redemption) as the proxy for the RPI-real RFR, as it is assumed that ILGs have negligible default and inflation risk.

7.126   In regulatory decisions prior to and then following the GFC, it was common practice to estimate the RFR with reference to longer-term averages of gilt yields. As interest rates were consistently falling over that period, this meant allowed RFRs were typically above prevailing spot rates.

7.127   The 2018 UKRN study looking into estimating the cost of capital to implement in price controls[93] brought this practice into question. This 2018 UKRN study describes the historical approach taken by the UK regulators as the 'dragging anchor' approach where in the interest of regulatory stability, the regulators would adjust their assumptions which would not respond instantaneously to every movement in the market rate.[94]

7.128   This 2018 UKRN study argued that there is merit in using historical averages for parameters of cost of capital that cannot be directly observed, such as the equity risk premium (**ERP**) or the TMR.[95] However, the RFR can be observed with minimal error and therefore does not require the same estimation strategy.[96] In decisions that followed regulators switched to placing weight mainly on recent yields.

7.129   For the CMA PR19 Final Report, the CMA chose to place equal weight on UK 20-year gilts and UK AAA non-government bonds using a 6-month average to estimate the RFR.[97]

7.130   Since the CMA PR19 Final Report, a mix of approaches have been adopted with some regulators using only ILGs and some also placing weight on other proxies.[98] We note the UKRN guidance recommends the following:

(a)   using long-dated ILGs at the assumed investment horizon in relevant sector as the risk-free proxy;

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[93] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators.
[94] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p33.
[95] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p34.
[96] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p34.
[97] CMA (2021) PR19 Final Report, p790, paragraph 9.241.
[98] UKRN (2024) Cost of Capital report – 2024 update, Table 6 Risk-free rates: approaches and estimates in CPI/CPIH-real terms, p18.

(b)   recent yields (going back no more than a year) are reasonable to inform the RFR;

(c)   the weight a regulator places on a sample of recent yields in determining the RFR point estimate, or range will be influenced by the methodological approach adopted.

7.131   The UKRN guidance also notes that non-ILG RFR proxies when stripped of accurately measured risk premia could provide a useful sense check in times of ILG market volatility or to help define the range.[99]

7.132   Before we go into the specific issues in estimating the RFR, we note that in principle the RFR is a parameter which is arguably the easiest to estimate in the CAPM (ie in some respects we agree with the sentiment of the 2018 UKRN Study which noted the RFR can be estimated with minimal error). While the debate on the appropriate approaches has expanded in recent years, going back to the principles we set out earlier, we think there is a good case for taking a step back and considering whether a relatively simple approach, rooted in readily observable market data, might be preferable in our redeterminations and in regulatory practice going forward.

7.133   We start by summarising Ofwat's PR24 FD approach and providing an overview of parties' submissions on RFR. We then go into more detail on the specific issues around estimating the RFR, including parties' specific points in relation on the issues and our assessment and decision on each issue.

Ofwat's PR24 FD approach

7.134   Between the PR24 DD and the PR24 FD, Ofwat maintained its approach to estimating the RFR but did update the inputs using the latest available information.

7.135   Ofwat's approach to estimating the RFR was based on (see Table 7.5 below):

(a)   a 1-month average of the 20-year RPI-linked gilts rate; plus

(b)   an adjustment to a CPIH basis using a 33bps RPI-CPIH wedge based on 20-year inflation expectations inferred from inflation swaps and official forecasts.[100]

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[99] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p14.
[100] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p9.

7.136   Ofwat chose to use the RPI-linked gilts rate as the sole risk-free proxy and did not place any weight on other available proxies concluding that placing weight on other proxies[101] was either unreliable or did not materially impact the estimate.[102]

7.137   Ofwat did not calibrate its RFR estimate for a convenience yield, considering evidence to be insufficiently reliable to apply to 10–20-year CAPM horizon.[103]

7.138   Ofwat chose not to apply a forward rate adjustment to its estimation of RFR, concluding forward rates demonstrated poor and upwardly biased forecast performance of 20-year gilt yields, finding spot 30-day trailing average to be superior.[104]

7.139   During PR24 methodology development, Ofwat consulted on indexing the RFR as one of the potential means to address estimation uncertainty and received limited support for the proposal.[105] While Ofwat retained the option of indexing the RFR in the PR24 final methodology, it ultimately decided against it in the PR24 DD.

Table 7.5: Ofwat PR24 FD RFR estimate

Parameter	Ofwat PR24 FD
20Y 1-month average RPI-linked gilts	1.19%
RPI-CPIH 'wedge'	0.33%
RFR (CPIH, real)	1.52%

Source: Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix Table 3, p21.

Overview of parties' submissions

7.140   All Disputing Companies submitted in their statements of case that Ofwat's estimate of the RFR was too low.

7.141   The Disputing Companies[106] estimated RFR range from 2.30% (CPIH, real) to 2.84% (CPIH, real) driven by the increase in the ILG yields between Ofwat's data cut-off date of 30 September 2024 and Disputing Companies' cut-off date of end of January 2025 as well as the proposed adjustments to the ILG yields (see Table 7.6 below).

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[101] Other proxies which Ofwat considered but did not use as part of its RFR estimate included nominal gilts, AAA-rated nominal bond indices (and constituents), AAA-rated RPI-linked bonds and the SONIA swap rate. Ofwat (2025) PR24 final determinations: Aligning risk and return - Allowed return appendix, p10.
[102] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp9–10.
[103] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p10.
[104] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p10.
[105] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p19.
[106] Anglian, South East and Southern.

7.142 Northumbrian acknowledged that the underestimation is partly due to the movement in the market with the remaining gap being due to the approach used.[107]

7.143 The Disputing Companies submitted that Ofwat's use of ILGs as a sole proxy for the RFR is too simplistic and is a departure from the precedent set by the CMA PR19 Final Report.[108]

7.144 The Disputing Companies submitted that Ofwat underestimated the RFR by not accounting for the additional premium implicit in the ILG yields, a 'convenience yield' due to their unique 'money-like' safety, liquidity, excess demand for highly rated government bonds driven by regulatory requirements and their ability to provide a valuable source of collateral.[109]

7.145 Kairos, Northumbrian's and Wessex's advisers, also submitted that the RFR should include a forward rate adjustment.[110] Some Disputing Companies also mentioned the Brennan CAPM framework.[111]

Table 7.6: Disputing Companies' estimated RFR range[112]

Parameter	Oxera	Kairos		KPMG	
		Low	High	Low	Point estimate	High
20-year 1-month average RPI-linked gilts	1.78%	1.80%	1.80%	1.85%	1.85%	1.85%
Adjustments[113]	0.24%	0.17%	0.47%	0.16%	0.41%	0.67%
RPI-CPIH 'wedge'	0.28%	0.33%	0.33%	0.32%	0.32%	0.32%
RFR (CPIH, real)	2.31%	2.30%	2.60%	2.33%	2.59%	2.85%

Source: Oxera (2025) PR24 Cost of equity estimation, p18; KPMG (2025) Estimating the Cost of Capital for PR24, p49, Table 9: Overall range and point estimate for the RFR; Kairos (2025) Setting the Allowed Return on Equity for PR24, p29.

7.146 In response to the CMA PR24 PD, in which we provisionally adopted ILGs as the sole proxy for the RFR, the Disputing Companies have maintained their view that estimation of the RFR using solely ILGs is downward biased.[114] The Disputing Companies have argued that not making the adjustments to the RFR to recognise the difference between investors' borrowing and saving rates and an adjustment

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[107] Northumbrian noted that Ofwat's RFR estimate is 0.8% and 1.1% below the RFR with approximately 0.3% of the difference is due to methodology and 0.6% of the difference being down to market movements since Ofwat's analysis was performed. Northumbrian SoC, paragraph 582.
[108] Northumbrian SoC, paragraph 582, Anglian SoC, paragraph 731, South East SoC, paragraphs 6.14–6.15, Southern SoC, p435, paragraph 118, and Wessex SoC, p89, paragraph 10.12(a). Disputing Companies' SoC were also supported by advisors' reports: KPMG (2025) Estimating the cost of capital for PR24, pp28–49; Kairos (2025) Setting the Allowed Return on Equity for PR24, pp15–31; and Oxera (2025) PR24 Cost of equity estimation, pp8–18.
[109] Anglian SoC, paragraph 730, Northumbrian SoC, paragraph 582, South East SoC, paragraph 6.14. Southern SoC, pp435–437, paragraphs 118 and 129–14.
[110] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp26–27 and p31.
[111] KPMG (2025) Estimating the cost of capital for PR24, pp34–36; Kairos (2025) Setting the Allowed Return on Equity for PR24, pp19–21, p28, p31 for Brennan (1971), and pp26–27 and p31 for forward rate adjustments.
[112] KPMG submitted revised RFR range estimates using September 2025 data.
[113] Adjustments figure represents the cumulative proposed adjustments including: convenience yield, lending vs borrowing rates (Brennan, 1971).
[114] Anglian SoC, paragraph 730, Northumbrian SoC, paragraph 582, South East SoC, paragraph 6.14. Southern SoC, pp435–437, paragraphs 118 and 129–141; South East (2025) Response to CMA PR24 PD, paragraph 6.15, p91;

for the 'specialness' of the ILGs results in a systematic underestimation of the 'true' RFR.

7.147   Most of the Disputing Companies submitted that by not making any adjustments to the ILGs the CMA has compromised accuracy of the RFR estimate in favour of simplicity.[115] Disputing Companies argued that the two adjustments (reflecting the difference in the borrowing and the savings rate and convenience yield) are required in the modern academic research, improve the accuracy of the RFR estimate and are well understood by the stakeholders.

7.148   Some Disputing Companies submitted a concern over CMA's inconsistency in its approach to the estimation of the RFR across the last three price reviews; with a particular focus on the difference in the approach between CMA PR19 Final Report and the CMA PR24 PD.[116] South East submitted that the CMA has departed from the important point of principle the CMA established in the PR19 redetermination which noted that ILGs did not completely meet [the CMA's] requirement of the RFR as applied in the CAPM.[117]

7.149   CCW submitted that the CMA approach to estimating the RFR has changed through time, often in investor-favourable ways.[118] Thames submitted its concern with departure from the CMA's PR19 approach to estimating the RFR. It submitted that CMA's PR19 approach to estimating the RFR was based on detailed review of the academic literature with the methodological finding not dependent on the low interest rates at the time of PR19.[119]

7.150   Ofwat submitted that it welcomed the CMA PR24 PD approach to estimating the RFR but noted its concern for potential overestimation of the RFR through the estimation of the RPI-CPIH wedge.[120] It was supportive of the CMA's use of ILG yields as the most credible proxy for the risk-free rate.[121] It also supported the CMA's decision not to apply a convenience yield and forward rate adjustments to the ILG yields.[122]

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[115] Northumbrian (2025) Response to CMA PR24 PD, p93, paragraphs 318, 320; Southern (2025) Response to CMA PR24 PD, paragraph 7.88, p147; KPMG (2025) Analysis of WACC in the PR24 Provisional Determinations, paragraphs 9.1.1–9.1.2, 9.3.12–9.3.16, pp40,47.
[116] Northumbrian SoC, paragraph 582; Anglian SoC, paragraph 731; South East SoC, paragraphs 6.14–6.15; Southern SoC, p435, paragraph 118; and Wessex SoC, p89, paragraph 10.12(a). Disputing Companies' SoC were also supported by advisers' reports: KPMG (2025) Estimating the cost of capital for PR24, pp28–49; Kairos (2025) Setting the Allowed Return on Equity for PR24, pp15–31; and Oxera (2025) PR24 Cost of equity estimation, pp8–18. Anglian (2025) Response to CMA PR24 PD, paragraphs 513, 553, pp186, 200; Northumbrian (2025) Response to CMA PR24 PD, paragraph 318, p93.
[117] South East (2025) Response to CMA PR24 PD, paragraph 6.16, p91.
[118] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p9.
[119] Thames Water (2025) Response to CMA PR24 PD paragraph 201(i), p35.
[120] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraphs 4.2–4.3.
[121] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.2.
[122] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.2.

UK ILGs as the basis of the RFR - choice of bond tenor

7.151 We first start by considering ILG evidence. ILGs remain a suitable input into the RFR estimation, as they are close to being risk free. Two key issues are the choice of bond tenor and the averaging period. We discuss each of these issues in turn.

7.152 At CMA PR24 PD, we used 20Y ILGs using a 1-month averaging period to estimate the RFR before applying an RPI-CPIH wedge.

Ofwat's PR24 FD approach

7.153 In PR24 Ofwat adopted a 10- to 20-year investment horizon for estimating the CAPM cost of equity. This is consistent with typical regulatory practice, including the UKRN guidance.[123] Ofwat subsequently used 20-year ILGs to estimate the RFR. Ofwat concluded that using 20-year ILGs (rather than using an average of 10-year and 20-year ILGs) provides inbuilt headroom should the RPI-linked gilts be downwardly-distorted proxies for the true RFR.[124]

Parties' submissions

Disputing *Companies*

7.154 The Disputing Companies did not raise concerns with Ofwat's approach of using 20-year tenor noting it broadly matched the long asset lives in the sector.[125] On behalf of Southern and South East, KPMG submitted that using 20-year ILGs rather than an average of 10-year and 20-year was appropriate because 20-year ILGs would broadly match the duration of cashflows implied by the average remaining asset life and would maintain consistency across the allowed return by aligning the tenor used for RFR and the tenor of the benchmark index used for cost of new debt.[126]

7.155 In response to the CMA PR24 PD, Southern submitted that the CMA is unclear about the appropriate CAPM horizon and requested that the investment horizon is confirmed to be at least 20 years.[127] Similarly, KPMG, on behalf of Anglian, South East and Southern, submitted that, if anything, there is evidence that the investment horizon should be longer than the 20 years assumed at PR19.[128] In

[123] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p14.
[124] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p13.
[125] Southern SoC, p435, paragraph 117.
[126] KPMG (2025) Estimating the cost of capital for PR24, paragraph 12.0.22.
[127] Southern (2025) Response to CMA PR24 PD, paragraphs 7.83–7.84, p146.
[128] KPMG (2025) Analysis of WACC in the PR24 Provisional Determinations, paragraph 9.3.2, p46.

support of this, KPMG submitted that asset lives have increased since PR19 with average asset lives in the sector being 24 years, based on Ofwat's PR24 FD.[129]

Ofwat

7.156   Ofwat, in its response to the Disputing Companies' statements of case, submitted there were strong reasons for maintaining a 10- to 20-year CAPM horizon, rather than a 20-year horizon as suggested by KPMG, for the reasons listed below (in addition to being in line with UKRN guidance and responses to PR24 methodology consultation):

(a)   the horizon reflected reasonable uncertainty about the horizon relevant to water investors;

(b)   the default risk premium in gilts rises with tenor. As the RFR should not embed such premia, the 10-year gilt rate is closer to this ideal than the 20-year;

(c)   linking CAPM horizon to asset lives is not necessary considering the regulatory framework involves resets to the allowed return at 5-yearly intervals. Reasonable alignment in the regulatory approach between price controls means there should be a significant degree of predictability but also allows for the approach to evolve over time;

(d)   assumptions used for the cost of new debt benchmark index are not relevant to the CAPM horizon used for cost of equity estimation;

(e)   CAPM horizon used by Ofwat was not different to the time horizon used by the PR19 Final Report, where the CMA used 10- and 20-year holding periods for TMR estimation; and

(f)   Southern and other Disputing Companies did not challenge the use of a 10-20-year CAPM horizon during the draft and final methodology consultations.[130]

Third parties

7.157   CCW referred to the work by its advisers, MCC Economics who submitted that Ofwat's estimate of the RFR was overstated and does not align with the 10- to 20-

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[129] Southern's Response to CMA PR24 PD, KPMG (2025) Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 9.3.2–9.3.5, p46.
[130] Ofwat (2025) Response to common issues on risk and return, paragraph 5.18.

year CAPM horizon, referring to Ofwat's use of 20-year RPI-linked gilts rather than 15-year RPI-linked gilts which were used in PR19.[131]

7.158   CCW submitted that Ofwat was inconsistent in using longer-tenor gilts to estimate the RFR considering Ofwat did not find evidence of existence of a convenience yield convincing. CCW did not accept Ofwat's justification of a 'possibility' of downward distortion of RPI-linked gilts as the reason to use a longer-tenor gilt rate.[132] CCW noted that had Ofwat used 15-year gilts, the RFR would have been approximately 30bps lower.[133]

Our assessment and decision

7.159   We conclude that 20-year ILGs are a good proxy for the RFR. While we recognise CCW's point that Ofwat could have used a shorter tenor which would also have been consistent with the 10 to 20-year investment horizon, we consider 20-year ILGs strike a reasonable balance between different evidence on the appropriate investment horizon. Recognising the long-term nature of the decision-making in the sector, we consider 20 years is likely to be closer to the investment horizon in the sector than 10 years. We also note that Ofwat has been consistent in its use of the 20-year tenor throughout the PR24 process and it is not something parties have generally challenged.

7.160   The 20-year tenor is also not out of line with regulatory precedent, with Ofwat using a 15-year ILG in Ofwat PR19 FD, and the CMA PR19 Final Report using 20-year ILG.

7.161   Regarding KPMG's proposal of using Ofwat PR24 FD average run-off rates to estimate the asset lives in the sector to inform the choice of investment horizon, we note run-off rates are no longer explicitly linked to actual depreciation of assets and therefore do not indicate assets' remaining useful life. Since Price Review 2009 (PR09), the companies themselves propose RCV run-off rates to Ofwat and Ofwat assesses them in the context of financeability and affordability.[134] However, we agree that the investment horizons are relatively long in this industry, which is why we have retained the use of 20-year gilts to estimate the RFR.

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[131] CCW (2025) Response to CMA PR24 PD, p7. CCW (2025) Response to CMA PR24 PD (MCC review appendix), p26.
[132] CCW (2025) Response to CMA PR24 PD, pp16–17.
[133] CCW (2025) Response to CMA PR24 PD, p17.
[134] IWC Final Report, p184, paragraph 393.

UK ILGs as the basis of the RFR - averaging period

7.162   A key issue in the choice of averaging period is whether gilt yields are generally assumed to be a random walk (ie to drift unpredictably over time)[135] or whether they tend to display some mean-reversion (ie settle back to a typical level after moving up or down). Ofwat noted in its PR24 final methodology that movements in government bond yields are commonly found to have no empirical tendency to revert to a stable mean.[136]

7.163   We consider it reasonable to assume that spot yields are the best estimate of future expected yields at any given point in time. However, spot yields are volatile and can be affected by one-off events. This is why it is common practice to consider a short-term average, such as a 6-month average (CMA PR19) or a 1-month average (Ofwat PR19, PR24).

Ofwat's PR24 FD approach

7.164   Ofwat used a 1-month average throughout the PR24 process, concluding in the PR24 FD that it struck a good balance between focusing on recent data while smoothing intraday volatility.[137]

Parties' submissions

Disputing Companies

7.165   KPMG, on behalf of Southern and South East, supported Ofwat's decision to use 1-month trailing average of 20-year ILG yields considering it was 50bps above the 12-month trailing average (using January 2025 as cut-off point).[138] KPMG submitted that the 1-month average better reflected the market expectation that the spot rates on bonds will increase over AMP8.[139]

7.166   KPMG also submitted that the forward rates for 20-year ILGs (and nominal gilts) suggested that the market expected for the spot rates on these bonds to increase over the price control. KPMG submitted that 1m trailing average should be retained if the upward trend in spot rates holds.[140]

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[135] Random walk theory suggests that changes in interest rates (and asset prices) are random and unpredictable. The work of Fama and others has shown that securities prices follow a random walk where the next observable price may be higher or lower but the mean drift of the trend line will generally be followed.
[136] Ofwat (2022) PR24 final methodology Appendix 11 Allowed return, p16. Ofwat quotes findings from ECB (2005) An international analysis of earnings, stock prices and bond yields, p19, where analysis finds UK gilts to have a 'unit root' meaning the root to be non-stationary.
[137] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p19.
[138] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 4.1.9.
[139] KPMG (2025) Estimating the Cost of Capital for PR24, paragraphs 4.1.10, 4.1.12.
[140] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 4.1.12.

7.167   Oxera, adviser to Anglian, and Kairos, adviser to Wessex and Northumbrian, also used a 1-month trailing average to estimate the RFR.

7.168   In response to the CMA PR24 PD, Southern and KPMG supported the CMA's use of 1-month average noting it best reflects prevailing and expected market conditions.[141]

Third parties

7.169   MCC Economics, on behalf of CCW, submitted that a larger sample of data should be used (ie estimating period to be longer than one month) to estimate the RFR by making a reference to their previous work performed on Ofwat PR24 methodology.[142] MCC Economics' work noted that a 1-month trailing average will be more generous than six to 12 months.[143] The work also noted that historical regulatory decisions have used a longer averaging period, such as CMA's PR19 Final Report.[144]

Our assessment and decision

7.170   We looked at 20-year ILG yields using a 1-month and a 6-month averaging period to consider whether any single interval offers a better averaging period which would reduce the risk of capturing volatility in the data.

7.171   Figure 7.1 below shows 20-year ILG yields over the last 5 years using various averaging periods. The data does demonstrate, as expected, that 1-month average is more volatile than a 6-month average. However, this needs to be counter-balanced against the risk of using less relevant data.

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[141] Southern (2025) Response to CMA PR24 PD, paragraph 7.85, p146; Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraph 9.3.9, p47.
[142] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p26. MCC Economics (2023) Peer review of Ofwat's PR24 WACC allowance 'early-view', paragraph 52, p19.
[143] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p26. MCC Economics (2023) Peer review of Ofwat's PR24 WACC allowance 'early-view', paragraph 52, p19.
[144] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p26. MCC Economics (2023) Peer review of Ofwat's PR24 WACC allowance 'early-view', paragraph 52, p19.

Figure 7.1: 20-year ILG yields

Source: CMA analysis of Bank of England 20Y ILGs, using spot rates.

7.172 As of 30 November 2025 (our analysis cut-off date) the 1-month average of 20-year ILGs is 2.18% compared to CMA PR24 PD 2.11% (using 30 June 2025 as cut-off date)[145] and 1.19% used by Ofwat in the PR24 FD. The 1-month average has increased materially since the PR24 FD (by 100bps), potentially highlighting both the benefits and risks of using short averaging windows. The benefit of using a 1-month average is that it will be more reflective of current market data but the potential risk is that it makes the WACC estimate more sensitive to the choice of the cut-off date.

7.173 The variance between a 1-month average and a 6-month average of 20Y ILG yields using the November 2025 cut-off date is 4bps, providing additional comfort that the averaging period chosen is not materially impacting the RFR estimate.

7.174 Taking into account the importance of incorporating the latest market data into the RFR we conclude that a 1-month averaging period is suitable and appropriate.

RFR indexation

7.175 Consideration of the suitable averaging period also brings into question whether there is a good case for RFR indexation, with a benefit of removing one aspect of volatility in cost of equity estimation if the RFR was indexed on an annual basis.

7.176 None of the Disputing Companies argued for indexation of the RFR in their submissions. In its response to the statements of case, Ofwat noted that gilt yields had increased materially since the cut-off date used for the PR24 FD and the updated cut-off date used by the Disputing Companies, and that if Ofwat had seen

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[145] In CMA PR24 PD, 20Y 1-month average ILG was incorrectly showing 22Y 1-month average of 2.11%. When corrected, 20Y 1-month average ILG using 30 June 2025 cut-off date would be 2.05%.

movements of this magnitude between draft and final determinations, it would have revisited its decision not to index the cost of equity.[146] However, Ofwat recognised that the implementation of such a mechanism through our redeterminations would require adequate consultation and consideration to mitigate the risk of unintended consequences.[147]

7.177   During the hearings, the Disputing Companies submitted that they were not averse to RFR indexation. However, they noted the extensive time and effort that would be required to implement such considerable change which would only apply to the Disputing Companies (and not the entire sector) alongside other issues being considered as part of our redeterminations.[148]

7.178   The Disputing Companies submitted that RFR indexation should be explored as part of a wider consultation across all companies, looking forward at PR29.[149]

7.179   Overall, we conclude that such a significant change in the methodology should be considered at an industry level, rather than on individual company basis.

Forward rate adjustment

7.180   The RFR is set for the five years of the price control. Some argue that a forward rate adjustment is required to the RFR to account for potential inaccuracy in the estimate and potential changes in interest rates over the price control period.

7.181   Only Kairos, Northumbrian and Wessex's advisers, proposed a forward rate adjustment to the RFR. We set out its submissions, Ofwat's position on forward rate adjustment and our assessment and decision below.

7.182   In CMA PR24 PD, we provisionally concluded not to apply a forward rate adjustment.

Ofwat's PR24 FD approach

7.183   In the PR24 FD, Ofwat maintained its approach in PR24 final methodology not to apply a forward rate adjustment.[150]

7.184   In its final methodology, Ofwat noted that the evidence suggesting forward rates overstate gilt yields does not support making a forward rate adjustment.[151] Ofwat updated its analysis in the PR24 DD, noting that forward rate adjustment appeared

[146] Ofwat (2025) Response to common issues on risk and return, paragraph 5.39.
[147] Ofwat (2025) Response to common issues on risk and return, paragraph 5.39.
[148] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p35, line 22–26, p36 lines 1–2.
[149] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p36, lines 3–6 and 12.
[150] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p19.
[151] Ofwat (2022) PR24 final methodology Appendix 11 – Allowed return on capital, pp7–18.

to overstate the true risk-free rate, and at a three-year horizon, a 30-day moving average outperformed forward rates.[152]

Parties' submissions

Disputing Companies

7.185   Northumbrian submitted that Ofwat should not have ignored a forward uplift to account for market-based quotes forecasting the evolution of yields on proxy instruments over PR24.[153] Northumbrian, supported by its advisers, Kairos, submitted that investors must be compensated for the risk that the RFR changes over the course of PR24, with forward rate uplift representing compensation for the investors bearing that risk.[154]

7.186   Kairos submitted that because the cost of equity is fixed for the price control period, the estimated RFR should reflect the return an investor can expect to achieve on a risk-less asset, at a specified point in time over the PR24 price control period, for the duration of the relevant investment horizon.[155] Kairos submitted that forward rates quoted today provide estimates of the level at which an investor can lock in the RFR.[156]

7.187   Kairos submitted that an uplift of 14bps is required to be added to the RFR to reflect the future RFR an investor is expected to achieve on a risk-less asset.[157]

Our assessment and decision

7.188   We are not persuaded by the arguments put forward to include a forward rate uplift in the RFR as overall forward rates do not appear to have good predictive power for spot rates. In the PR24 DD, Ofwat presented analysis of forward 20-year ILGs compared to 20-year ILG spot rates between 2001 and 2024. Ofwat noted that historically, forward rates appear to mostly overstate the true RFR sometimes at a significant margin of over 100bps (see Figure 7.2 below).[158] More recently, as can be seen from the graph, forward rates have been a poor predictor of the upward trend in interest rates.

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[152] Ofwat (2024) PR24 draft determinations: Aligning risk and return Allowed return appendix, p18.
[153] Northumbrian SoC, paragraph 582.
[154] Northumbrian (2025) Response to CMA PR24 PD, paragraph 321, p94.
[155] Kairos (2025) Setting the Allowed Return on Equity for PR24, p26.
[156] Kairos (2025) Setting the Allowed Return on Equity for PR24, p26.
[157] Kairos (2025) Setting the Allowed Return on Equity for PR24, p27.
[158] Ofwat (2024) PR24 Draft determinations Aligning risk and return Allowed return appendix, Figure 4, p18.

Figure 7.2: 3 year forward 20-year RPI gilts rate vs 20-year RPI gilts rate (January 2001 – April 2024)

Figure 4: 3 year forward 20 year RPI gilts rate vs 20 year RPI gilts rate (January 2001 – April 2024)

Source: Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, Figure 4, p18.

7.189 We consider this evidence supports the hypothesis that forward rates are not a better predictor of future RFR than spot rates.

7.190 In relation to Northumbrian's and Kairos' argument that investors need to be compensated for the risk that the RFR changes over the price control we do not consider that an explicit adjustment to the RFR estimate is required. A fixed RFR is not a new feature of the water sector regulation; investors are aware of the regulatory framework and have the means to hedge for the risk of movement in the RFR, should they choose to do so.

7.191 If the risk of the RFR changing was perceived by the Disputing Companies to be significant, RFR indexation would be another approach to addressing it. However, as noted earlier, the Disputing Companies expressed limited support for RFR indexation as part of this process.

7.192 We conclude that it is appropriate to maintain our position at the CMA PR24 PD and we do not apply a forward rate adjustment.

Converting RPI ILGs into CPIH-real RFR

7.193 Given that ILGs are linked to RPI, we need an estimate of the RPI-CPIH wedge to convert our 20-year ILG yield into CPIH real terms.

7.194 At CMA PR24 PD, we used Ofwat's approach to estimating the RPI-CPIH wedge (set out below) and estimated a wedge of 0.38%.

7.195   To estimate the RPI-CPIH wedge, Ofwat placed equal weight on official forecasts and 20-year RPI and CPI swap rates.

7.196   The official forecast method uses short-term inflation forecasts to 2030 to estimate the RPI-CPIH wedge, after which point it is assumed that the wedge is zero, given the ONS decision to align RPI with CPIH from 2030. While in the PR24 DD Ofwat used the official forecasts produced by the OBR, in the PR24 FD Ofwat noted that the OBR's November inflation forecasts arrived too late to be considered in its decision-making process.[159] Instead, Ofwat chose to use the August 2024 version of the HMT comparison of independent forecast series to provide the data.[160]

7.197   The swap-based method directly estimates the RPI-CPI wedge using 20-year market-implied rates. Under the swap method, Ofwat assumed that CPIH can be proxied directly by CPI.[161] Ofwat estimated the average wedge from the official forecast method of 0.23% and a market-implied wedge of 0.43%, which it then averaged to arrive at an RPI-CPIH wedge of 0.33%.[162]

Parties' submissions

Disputing Companies

7.198   All the Disputing Companies followed the same approach to estimating the RPI-CPIH wedge as Ofwat.

7.199   Kairos, on behalf of Northumbrian and Wessex, submitted that there is merit in considering both approaches of relying on official forecasts and market quotes of RPI and CPI inflation swaps.[163]

7.200   Kairos submitted that both sources had their flaws, with official forecasts not capturing the market forecasts for inflation risk premium and with inflation swap-based estimates carrying liquidity risk and transaction costs.[164]

7.201   KPMG, on behalf of Southern and South East, submitted Ofwat's approach to estimating the RPI-CPIH wedge to be reasonable in principle.[165] However, KPMG submitted that the CMA should monitor evidence on the RPI-CPIH wedge and

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[159] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p20.
[160] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p20.
[161] Ofwat noted in its PR24 final determinations Aligning risk and return Allowed return appendix that it had assumed CPI and CPIH to be interchangeable due to similarities between long-run averages of both series and lack of a persistent positive or negative CPI-CPIH 'wedge'. Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p14, footnote 20.
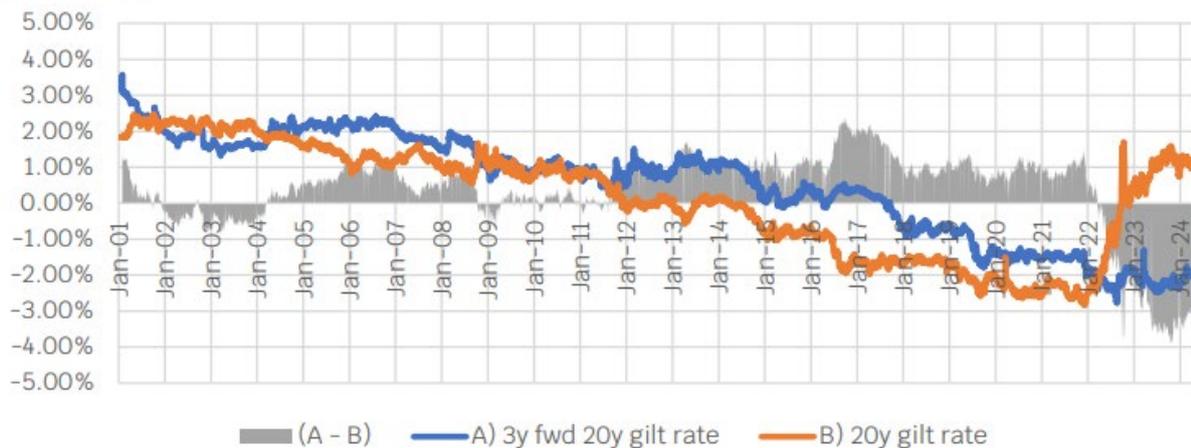[162] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p21.
[163] Kairos (2025) Setting the Allowed Return on Equity for PR24, p28, paragraph 84.
[164] Kairos (2025) Setting the Allowed Return on Equity for PR24, p28, paragraph 84.
[165] KPMG (2025) Estimating the Cost of Capital for PR24, p48, paragraph 4.5.9.

consider whether it is appropriate to assume a CPI-CPIH wedge of zero over the period until the 2030 UKSA RPI reform.[166]

Ofwat

7.202 Ofwat's advisers, CEPA submitted that the OBR latest forecasts of CPIH support a smaller upward adjustment to RPI-linked ILGs to arrive at a suitable RFR.[167]

7.203 In response to the CMA PR24 PD, Ofwat submitted that OBR's 0.4% long-term CPIH-CPI wedge should be included when estimating the RPI-CPIH wedge using the swap-based approach.[168]

7.204 Ofwat submitted that it would be consistent with the official forecasts to account for the 0.4% long-term CPIH-CPI wedge which would correct an overstatement in the CMA PR24 PD of the RFR of 20bps.[169] Ofwat argued that by not including the 0.4% CPIH-CPI wedge the RPI-CPIH wedge would not account for the inflation risk premium included in the swap rate when adjusting nominal yields.[170]

7.205 Ofwat submitted that not including the 0.4% CPIH-CPI wedge would be equivalent to an assumption that in the long-term investors expect that the CPI and CPIH will be equivalent to each other, ie the wedge between CPIH and CPI will be zero.[171]

7.206 Ofwat also submitted that the CMA using a market-based measure of the RFR requires the CMA to use an appropriate market-based deflator to embed correct CPI inflation expectations, at the relevant tenor.[172]

Our assessment and decision

7.207 We conclude to continue to use Ofwat's approach to estimating the RPI-CPIH wedge. However, due to the movement in the underlying data, the wedge is lower than the one estimated in the CMA PR24 PD.

7.208 Overall, we consider Ofwat's approach to estimating the RPI-CPIH wedge to be reasonable. The Disputing Companies did not raise concerns with the approach of placing equal weight on official and market-implied forecasts for inflation.

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[166] KPMG (2025) Estimating the Cost of Capital for PR24, p48, paragraph 4.5.10.
[167] Ofwat (2025) Response to common issues on risk and return. CEPA (2025) Supplementary evidence on the cost of equity: response to statements of case, p2.
[168] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p10, paragraph 4.5.
[169] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p10, paragraph 4.5.
[170] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p10, paragraph 4.5.
[171] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p10, paragraph 4.5.
[172] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p10, paragraph 4.5.

Official forecasts approach

7.209   We use the OBR's latest available official forecast published in November 2025. To arrive at the RPI-CPIH wedge we took the last quarter of 2025 and first quarter of 2026 of the OBR forecast, with financial-year annual inflation forecast up to 2029-30. We have assumed a zero wedge from 2030-31 financial year, in line with the ONS plans to align the RPI with the CPIH from February 2030. We then calculated the geometric average wedge for the full 20-year of 0.20% (see Table 7.7 below).

Table 7.7: RPI-CPIH wedge calculation

	RPI (OBR)	CPIH (OBR)	RPI-CPIH wedge
2025 Q4	4.66%	3.79%	0.84%
2026 Q1	4.39%	3.37%	0.99%
2026-27	3.41%	2.37%	1.01%
2027-28	3.05%	2.11%	0.92%
2028-29	2.89%	2.13%	0.75%
2029-30	2.91%	2.10%	0.79%
Average	3.55%	2.64%	0.87%
Long-term assumption	2.40%	2.40%	0.00%
20Y average	-	-	0.20%

Source: CMA analysis based on OBR November 2025 economic and fiscal outlook.

Swap-based approach

7.210   Swap data is provided by brokers and there is not a single preferred provider or data source. For the FD, we have aligned the CPI-swap to the one used by Ofwat at the PR24 FD and the one used by the Disputing Companies in their statements of case.[173] The CPI-linked swap yields used by Ofwat and the Disputing Companies imply a higher expected CPI, compared to the CPI-linked swap we used at CMA PR24 PD.[174]

7.211   The 1-month average 20-year CPI-linked swap yield is 2.78% compared to 2.68% for June and to 2.77% for September 2024 (Ofwat's analysis window). The 1-month average 20-year RPI-linked swap yield is 3.01% compared to 3.05% for June and to 3.20% for September 2024 (Ofwat's analysis window).

7.212   Overall, the swap-based estimates now imply an RPI-CPI wedge of 0.22%,[175] compared to a wedge of 0.43% in Ofwat's FD. This is similar to the RPI-CPIH

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[173] This was prompted by Ofwat's response to the CMA PR24 PD noting that it could not replicate the CMA's PD estimate and our further investigation of underlying data sources. We satisfied ourselves that the CPI swap data used by Ofwat and the Disputing Companies came from a reliable source. We consider it is better to align to the source used by all the parties. Finally, we note that the CPI-swap used at PD is no longer supported by LSEG Refinitiv, our financial data provider.
[174] In CMA PR24 PD, we used a 20-year CPI-linked swap yield of 2.45% (using 30 June 2025 as cutoff date). The equivalent 20-year CPI-linked swap yield used by Ofwat at PR24 FD was 2.68%, for the same cutoff date.
[175] Estimated using the Fisher equation.

wedge derived from official forecasts (estimated to be 0.20%, see Table 7.7 above).

7.213   If we were to assume a positive CPIH-CPI wedge, the swap-based estimate would imply a smaller RPI-CPIH wedge than the official forecasts.

7.214   While the OBR estimates a long-term CPIH-CPI wedge of 0.4%,[176] and we continue to use it to underpin our long-term CPIH assumption of 2.4% (as explained under 'Long-term CPIH inflation assumption' above), applying this wedge to the swaps-based estimate of CPI would imply a negative RPI-CPIH wedge which does not appear credible. Therefore, as a pragmatic solution, we use the swap-based RPI-CPI wedge directly as an estimate of the RPI-CPIH wedge, without further adjustments. This highlights the potential noisiness in the swap data and the need to rely on other sources to estimate the wedge. Overall we continue to see merit in placing weight on both available methods of estimating the RPI-CPIH wedge and therefore continue to place equal weight on both the official forecast and swap-based approaches. However, we acknowledge that the variance in swap data and the uncertainty around the market-implied CPIH-CPI wedge poses some interpretation challenges when it comes to the swaps data.

7.215   We conclude on an RPI-CPIH wedge of 0.21% based on a simple average of the two approaches above (ie an average of 0.20% and 0.22%).

7.216   Intuitively, a decrease in the RPI-CPIH wedge since Ofwat's PR24 FD is in line with the expectation of RPI and CPIH converging, the closer it gets to the 2030 target set by the ONS RPI reform.

Convenience yield

Introduction

7.217   The debate about convenience yield previously arose during the CMA's PR19 Final Report, with some parties suggesting that observed ILG yields are below the true RFR due to their special features.

7.218   A convenience yield (**CY**) is often described as a discount on the yield investors are prepared to accept because of several characteristics of government bonds, such as their money-like nature, superior liquidity, superior collateral value, and excess demand from institutional investors driven by regulatory requirements.

7.219   In the CMA PR19 Final Report, the CMA chose to apply the Brennan CAPM framework to estimate the RFR and placed weight both on ILGs and AAA bond yields to derive the RFR range. The CMA then chose a point estimate within that

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[176] Office for Budget Responsibility (OBR) Economic and fiscal outlook – October 2024.

range, which was above the ILG rate. While this was mainly in recognition that the Brennan CAPM allowed for different borrowing and lending rates, it also implicitly allowed for the possibility of ILGs containing a positive CY.[177] However, the CMA did not make an explicit adjustment to gilt yields for a CY, as this risked a double correction.[178] We further note that the context for the CMA PR19 Final Report was unusual, with yields on ILGs being strongly negative in real terms at the time of the inquiry.

7.220   At CMA PR24 PD we did not adjust for a CY when estimating the RFR.

Ofwat's PR24 FD approach

7.221   In its PR24 FD, Ofwat concluded not to apply a CY adjustment for the 20-year ILGs due to insufficiently strong evidence to accurately estimate an adjustment for the 10- to 20-year CAPM horizon.[179]

7.222   Ofwat noted in its PR24 FD that the paper by Diamond and Van Tassel (2021) is still the only academic estimate of the CY available for the UK and it only considers CY at short tenors of up to 2 years.[180]

7.223   Ofwat also noted that the premise of a CY in long-dated gilts was undermined by the AAA-rated index of corporate bonds having a lower average yield than the 20-year nominal gilts rate with comparable maturity. Ofwat stated that given numerous representations arguing that gilts were affected by a CY, Ofwat would have expected this to be reflected by a positive spread-to-gilt in the AAA-rated bond index.[181]

Parties' submissions

7.224   Before summarising parties' submissions, we note that Ofwat has reviewed a range of empirical evidence on the presence and potential size of CY during the PR24 process. The Disputing Companies have subsequently cited a lot of this evidence in their submissions. We do not systematically go over each individual academic paper presented to us on the topic but we highlight the key themes below before providing our assessment.

7.225   We adopt this approach because overall there is no dispute that there is empirical evidence that historically positive CYs have been a feature of government bond

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[177] CMA (2021) PR19 Final Report, pp795–796, paragraph 9.264.
[178] CMA (2021) PR19 Final Report, p789, paragraph 9.235.
[179] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p18.
[180] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p18.
[181] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p16.

yields in many developed economies.[182] However, most of the evidence has tended to focus on US data and on short-term nominal government bonds.

7.226 We observe that there is agreement between Ofwat and the Disputing Companies that the approach taken in Diamond and Van Tassel (2021) last updated in 2025, is the most robust.[183] This is also the only paper which provides UK evidence, for the period from 2005 to 2020.

7.227 Diamond and Van Tassel (2021) infer RFRs from index options prices to estimate safe asset CYs in ten G11 currencies. The paper's objective was to compare the yield of a safe or money-like asset to a RFR implied by the prices of assets that are not themselves safe or money-like.

7.228 Diamond and Van Tassel (2025) latest estimates of CY are set out in Table 7.8 below.

Table 7.8: Summary convenience yields for government bonds between January 2005 to July 2020

Country	3-month	6-month	1 year	2 years	3 years
USA	0.34%	0.36%	0.36%	0.35%	-
UK	0.22%	0.30%	0.35%	0.29%	-
Euro	0.29%	0.29%	0.28%	0.24%	0.21%
Switzerland	-	-	0.00%	0.14%	0.19%
Canada	0.47%	0.37%	0.36%	0.29%	-
Australia	0.61%	0.63%	0.60%	-	-

Source: Diamond W and Van Tassel P (2025) p16.

Disputing Companies and third parties

7.229 Disputing Companies overall argued that CY evidence for short-dated nominal gilts is sufficient to assume the presence of a positive CY at longer maturities for ILGs.

7.230 Disputing Companies submitted broad, overarching arguments, as a point of principle, of why not adjusting the ILG yield for a CY would result in a RFR estimate that is inaccurate, downward biased, inconsistent with the modern academic research and which does not reflect the 'true' RFR.

7.231 Anglian submitted that it did not agree that adjusting for a CY is a 'subjective' adjustment to observable market data in contrast to the observable ILGs. Anglian noted that this conflated ILGs with the RFR and that ILGs are not a perfect proxy for the RFR.[184]

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[182] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p27, lines 15–18 (CMA); p27, lines 19–21 (Disputing Companies); p29, lines 23–26 (Ofwat).
[183] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p29 lines 23–26 (Ofwat); p33, lines 2–4 (Disputing Companies). Diamond W and Van Tassel P (2025) Risk-free rates and convenience yields around the world.
[184] Anglian (2025) Response to CMA PR24 PD, paragraph 554, p200.

An upward adjustment for CY is justified

7.232   On behalf of Anglian, Oxera submitted that the range of implied CY based on different estimation periods and methodologies for US treasuries shows a wide range of estimates but which is consistently positive.[185] Oxera submitted that research by the Bank of England found UK government bonds to exhibit similar properties to those of US treasuries, suggesting that CY also exists in the UK.[186]

7.233   On behalf of Northumbrian and Wessex, Kairos submitted that despite the reasonable uncertainty across estimates of the CY, the estimates presented in the Diamond and Van Tassel (2025) paper are materially greater than zero, and are consistently above zero which warrants an adjustment.[187]

7.234   MCC Economics, on behalf of CCW, submitted that UK bond yields are higher than many of its sovereign peers indicating that UK bonds are not risk-free.[188]

ILGs and nominal gilts are sufficiently similar

7.235   Kairos submitted that there was no evidence to suggest that investors' willingness to sacrifice a return on short-term nominal gilts does not apply to a sufficient degree to gilts of regulatory investment horizon (ie 10- to 20-years).[189]

7.236   Kairos further submitted that estimates of the CY provided by nominal gilts may overestimate or underestimate the CY that applies to ILGs.[190] Kairos submitted that in January 2025, the total principal amount of ILGs outstanding was £625bn representing approximately 24% of outstanding stock of both all gilts suggesting that the liquidity of ILGs may not be sufficiently different to that of nominal gilts which would require an adjustment to an estimate of the CY for ILGs on the basis of liquidity alone.[191]

7.237   KPMG submitted that the vast majority of the CY factors apply similarly to nominal gilts and ILGs but nominal gilts may be more liquid than ILGs. Due to the similarities in characteristics of nominal gilts and ILGs, KPMG suggested that nominal gilts are a good benchmark for CY for ILGs.[192]

Short-dated vs longer-dated safe assets

7.238   KPMG, representing South East and Southern, submitted that it is reasonable to assume that CY holds for longer-dated safe assets because the term structure of

[185] Oxera (2025) PR24 Cost of equity estimation, p9.
[186] Oxera (2025) PR24 Cost of equity estimation, p9.
[187] Kairos (2025) Setting the Allowed Return on Equity for PR24, p23, paragraph 61.
[188] CCW (2025) Response to CMA PR24 PD (MCC review appendix) p26.
[189] Kairos (2025) Setting the Allowed Return on Equity for PR24, p28. paragraph 82.
[190] Kairos (2025) Setting the Allowed Return on Equity for PR24, p23, paragraph 63.
[191] Kairos (2025) Setting the Allowed Return on Equity for PR24, p23, paragraph 63.
[192] KPMG (2025) Estimating the Cost of Capital for PR24, p32, paragraph 4.2.20.

CY in academic literature is mostly upward sloping; and the collateral value component of CY for longer-dated safe assets is at least the same as that for shorter-dated safe assets.[193]

7.239   KPMG submitted that it was important to recognise the effect of liability-driven investor (LDI) demand which is the key reason why CY for long-dated ILGs could be higher than short-dated NGs. KPMG noted a much stronger demand for the ILGs in the UK than in the US due to the UK Pensions Regulator encouraging pension funds to hedge, compared to the US regulators which are less prescriptive.[194] KPMG submitted that the UK's deep and persistent LDI demand for long-dated ILGs suggests continued scarcity for these assets, even if market conditions change.[195]

7.240   KPMG submitted the difference in haircuts applied to market value of gilts and AAA corporate bonds at 20-30 years maturity to derive their collateral value is wider (at 31.5%) than that at 1-3 years maturity (at 30.5%). KPMG argued that this evidence indicated that the collateral value component of CY could increase at longer maturities.[196]

CY estimates

7.241   Kairos estimated a CY of 17bps, by taking a weighted average spread for the iBoxx AAA non-gilt indices (10-15 years and 10+) against tenor-matched gilt benchmark equivalent bonds, taking a 1-month average in the period preceding 17 January 2025. These spreads were 13bps and 21bps for the 10-15 index and for the 10+ index respectively, with an average of 17bps.[197]

7.242   KPMG submitted that based on the calculations performed in its KPMG September 2023 Cost of Equity report the range for 2-year CY for ILGs is between 2 and 29bps. KPMG took the midpoint of this range of 15.5bps as its point estimate of CY, to be added to the 20-year ILG yield.[198] The estimate of the 15.5bps was maintained throughout the process.

7.243   Oxera estimated a CY of 24bps, by comparing the yields on the iBoxx AAA non-gilt indices (10–15 years and 10+) to duration-matched nominal gilts using a five-year average to 31 January 2025.

[193] KPMG (2025) Estimating the Cost of Capital for PR24, p33, paragraph 4.2.23.
[194] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p44, paragraphs 9.2.15–9.2.17.
[195] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p46, paragraph 9.2.30.
[196] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p44, paragraph 9.2.20.
[197] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp20–21, paragraph 52.
[198] KPMG (2025) Estimating the Cost of Capital for PR24, p44, paragraphs 4.4.31–4.4.32.

7.244   Southern, and KPMG, submitted that should it not be possible to estimate the CY and therefore identify the RFR, instead of making no adjustment to the ILGs, the correct approach would be to use the zero-beta return instead of the RFR in the CAPM.[199]

Ofwat

General issues

7.245   In Ofwat's response to the Disputing Companies' statements of case, Ofwat submitted that conflicting evidence exists to suggest that CYs are lower than when this issue was considered at PR19, are lower at longer durations and may even be negative.[200]

7.246   Ofwat reiterated some of its PR24 FD reasoning that the Diamond and Van Tassel (2025) estimates of CY for short-dated gilts was not sufficient evidence to assume the presence of a positive CY for longer-dated ILGs.[201] [202]

7.247   Ofwat submitted that in Diamond and Van Tassel (2025) itself there was a declining term structure of CY for most countries.[203]

7.248   Ofwat also submitted that longer-dated securities are more sensitive to changes in interest rates, making them less valuable as collateral, citing evidence from the Bank of England on typical haircuts for lending collateral for gilts.[204]

Impact of fiscal and monetary policy

7.249   Ofwat further cited a paper by Jiang et al (2024) which showed CY in US treasuries declining significantly in recent years, with larger declines for longer-dated instruments, with CY on long-dated bonds negative towards the end of the period.[205] Mason, Robertson and Wright, advisers to Ofwat, also noted that Jiang et al findings point to considerable variability in CYs over time with reversal in signs not unusual.[206]

7.250   Ofwat submitted that the greater supply of safe assets from quantitative tapering and tighter monetary policy has reduced the CY, quoting a speech by Isabel Schnable, a member of the Executive Board of the European Central Bank, who

[199] Southern (2025) Response to CMA PR24 PD, p147, paragraph 7.90. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p43, paragraphs 9.2.9–9.2.11.
[200] Ofwat (2025) Response to common issues on risk and return, p17, paragraph 1.47.
[201] Ofwat (2025) Response to common issues on risk and return, p89, paragraph 5.21.
[202] Ofwat (2025) Response to common issues on risk and return, p91, paragraph 5.27; Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p19, paragraph 3.13.
[203] Ofwat (2025) Response to common issues on risk and return, p92, paragraph 5.23.
[204] Ofwat (2025) Response to common issues on risk and return, pp92–93, paragraph 5.26.
[204] Ofwat (2025) Response to common issues on risk and return, p90, paragraph 5.26.
[205] Jiang et al (2024) Bond convenience yields in the Eurozone currency union, pp22–23.
[206] Jiang et al (2024) Bond convenience yields in the Eurozone currency union, p18, p20 and p25, Figure 2 (Panel A).

noted that 'persistently large fiscal deficits and central bank balance sheet normalisation are gradually reducing the safety and liquidity premia that investors have long been willing to pay to hold scarce government bonds'.[207]

7.251 Mason, Robertson and Wright presented more recent evidence that the CYs of government bonds may now be negative on longer maturities.[208] Mason, Robertson and Wright stated that the evidence suggests this is due to the change in the fiscal policy, with governments switching from quantitative easing to quantitative tightening, large fiscal deficits and central bank balance sheet normalisation.[209]

7.252 Both Ofwat and Mason, Robertson and Wright also cited a paper by Du et al (2024) which found that CYs in the US and the UK are negative, with the sign reversal in the CY changing in the last two years from positive to negative, to argue that a CY may now be negative or close to zero.[210]

7.253 Ofwat agreed with the CMA's view in the CMA PR24 PD of not adjusting for a CY and reaffirmed original view of lack of evidence for existence and size of the CY for 10-20-year ILGs and that the increased supply of government debt driven by large government deficits reduces the scarcity value of ILGs and therefore of any potential CY.[211]

Disputing Companies' CY estimates

7.254 In relation to the quantitative estimates of CY derived by the Disputing Companies' advisers:

(a) Ofwat submitted that it had concerns that estimates of a CY based on spreads between gilt yields and yields on other instruments might be reflecting the liquidity premium for those instruments, rather than a CY;[212]

(b) Ofwat submitted that a proper calibration of CY is an important issue because making adjustments that are poorly evidenced can exacerbate rather than correct any distortions caused by any embedded CY;[213] and

(c) Mason, Robertson and Wright submitted that Oxera's approach to estimating the CY by using Macaulay duration[214] of indices works in principle. However,

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[207] Ofwat (2025) Response to common issues on risk and return, p89, paragraph 5.23.
[208] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p21, paragraph 3.18.
[209] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p21, paragraph 3.18.
[210] Du et al (2024) Quantitative tightening around the glove: what have we learned?.
[211] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p9, paragraph 4.2.
[212] Ofwat (2025) Response to common issues on risk and return, pp84–85, paragraph 5.5.
[213] Ofwat (2025) Response to common issues on risk and return, p88, paragraph 5.20.
[214] Macaulay duration of a bond is the weighted average time until a bond's cash flows are received. By definition, they are typically shorter than the maturity of the bond.

they argue that Oxera's use of Macaulay duration does not replace the evidence gap as to the CYs at 10- and 20-year maturities.[215]

Disputing Companies' reply

7.255　Disputing Companies submitted that in Diamond and Van Tassel (2025) the structure of the CY in the UK is mostly upward-sloping and noted that non-UK data is less relevant for CY driven by institutional factors such as collateral regimes and liability driven investor demand.[216]

7.256　Disputing Companies submitted that Mason, Robertson and Wright's analysis of Jiang et al (2024) findings of CY structure for the Eurozone countries to be downward-sloping to be misleading.[217] The Disputing Companies noted that the paper does not measure the term structure of a CY because it uses a benchmark CY as a starting point which means it only measures the term structure of relative CY.[218] Disputing Companies noted that Mason, Robertson and Wright's findings are referring to absolute CY which can only be made if there is no benchmark at all.[219]

7.257　Disputing Companies submitted that on the term structure of CY, the Jiang et al (2024) paper found that Finland and the Netherlands are the only countries not to have a downward-sloping CY structure, and that this is due to liability-driven investor demand for long-dated government bonds, which is well-established in the US and is much greater in the UK than in the US.[220]

7.258　Disputing Companies noted that Diamond and Van Tassel (2025) observe that CY has a positive relationship with interest rates and interest rates have risen significantly.[221] Even if quantitative tightening does have a negative effect on CY for gilts, Disputing Companies submitted that because of the increase in interest rates, the impact on CY is positive. They therefore noted that it cannot be assumed that the current CY has declined.[222]

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[215] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p24, paragraph 3.22.
[216] Disputing Companies (2025) Joint reply to Ofwat's Response, p20, paragraph 86.
[217] Disputing Companies (2025) Joint reply to Ofwat's Response, pp20–21, paragraph 87.
[218] Southern (2025) Response to CMA PR24 PD, p147, paragraph 7.90. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p44, paragraphs 9.2.14–9.2.15.
[219] Disputing Companies (2025) Joint reply to Ofwat's Response, pp20–21, paragraph 87. Southern (2025) Response to CMA PR24 PD, p147, paragraph 7.90. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p44, paragraphs 9.2.14–9.2.15.
[220] Disputing Companies (2025) Joint reply to Ofwat's Response, pp20–21, paragraph 87.
[221] Disputing Companies (2025) Joint reply to Ofwat's Response, pp20–21, paragraph 87. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p46, paragraph 9.2.31.
[222] Disputing Companies (2025) Joint reply to Ofwat's Response, pp20–21, paragraph 87. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p46, paragraph 9.2.31.

Our assessment and decision

7.259   We acknowledge the extensive empirical evidence on existence of a CY for nominal bonds with short tenors, in different developed economies. However, it is difficult to estimate with any precision what the likely CY is for UK longer-dated index-linked assets. Given that a proxy for the RFR that is easily observable and understood by the market participants, such as the ILG, exists (in the context of the CAPM framework), we need to consider carefully whether subjective adjustments to observable market data genuinely improve on our estimate.

Short-dated vs longer-dated safe assets

7.260   The literature exploring the relationship between maturity and CYs is quite limited and provides conflicting evidence. Diamond and Van Tassel (2025) observe an increasing CY for nominal bonds of 3-months, 6-months and 1-year bonds. However, for the 2-year bond, the CY decreases, not just for the UK but other developed economies, such as the US, the EU and Canada (see Table 7.8 above). Inversion in the trajectory of the CY at 2-year maturity for nominal bonds therefore gives a mixed picture of the relationship between CY and maturity.

7.261   While we do not dispute that intuitively some of the reasons which explain the presence of a CY for short-dated nominal gilts may similarly apply to long-dated ILGs (eg superior liquidity, demand from institutional investors to satisfy regulatory requirements) there are also some features which might be less relevant for long-dated ILGs (eg superior collateral value).

7.262   We are not persuaded that the evidence data on haircuts for gilts and AAA is strong evidence that collateral value component of a CY increases at longer maturities. Comparing the 20-30 years maturity spread of 31.5% to 1 to 3 years maturity spread of 30.5% results in a 1% increase in the spread of haircuts, which we do not consider to be a sufficiently robust indicator that the collateral value component of CY for gilts increases at longer maturities.

ILGs and nominal gilts are sufficiently similar

7.263   We agree that nominal gilts and ILGs share many similar characteristics, whether that is liquidity, money-like roles, their use as collateral or the demand for these assets to satisfy regulatory requirements.

7.264   However, just because nominal gilts and ILGs share similar characteristics, we cannot be confident that estimates of CY for nominal gilts can be directly applied to ILGs. Notable differences in the characteristics listed above exist between the two types of gilts which cannot be overlooked when considering applying a CY for short-dated nominal gilts to long-dated ILGs.

7.265   For example, around 75% of UK gilts in issuance are nominal gilts, with remaining balance predominately made up of ILGs.[223]

7.266   Although ILGs can be used as a medium of exchange, similar to nominal gilts, ILGs tend to have longer maturities which reduces their equivalence to nominal gilts whose maturity varies greatly. ILGs therefore may be used less as collateral compared to nominal gilts.

7.267   Notably, the Bank of England's working paper on the 2022 gilt market crisis finds that index-linked gilts made up a larger proportion of the sales during the crisis when compared to nominal gilts.[224] Additionally, the working paper notes that index-linked gilts were sold more uniformly across the different maturities compared to nominal gilts which were only sold at maturities greater than 10 years.[225] This suggests that investors may perceive some differences in the money-like and safety features of nominal versus index-linked gilts.

7.268   We therefore find, that despite the similarities in a number of characteristics across nominal and index-linked gilts, we cannot assume that a CY for short-dated nominal gilts applies to long-dated ILGs.

Impact of fiscal and monetary policy

7.269   Diamond and Van Tassel's (2025) estimates of CY are for the period to 2020. Interest rates have risen considerably since then, the quantitative easing is over, and governments are running fiscal deficits. While we recognise that the empirical evidence on most recent trends in CY is also limited, the presence of a materially positive CY in government bonds in current market conditions is less likely than five years ago.

7.270   Although we agree that historically the UK pension system may have been price-insensitive to the demand for long-dated bonds, KPMG's argument of the effect on the ILG yields by the LDI demand in the context of this price control and for the future price controls is less convincing with the backdrop of potential future large-scale reduction of gilt holdings by pension funds.

7.271   In July 2025, the OBR published its Fiscal risks and sustainability report.[226] It forecast that the UK pension fund ownership of gilts will fall from almost 30% of GDP in 2024 to 11% of GDP per cent by 2074.[227] The OBR estimated that around £560 billion of gilts will be liquidated with neither bulk annuity insurers nor defined

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[223] United Kingdom Debt Management Office, Quarterly review, July – September 2025, p1. The report shows nominal value of nominal gilts on 30 September 2025 as £2.1bn and ILGs as £0.7bn equating to nominal gilts representing 74% and ILGs c24%.
[224] Bank of England (2023) An anatomy of the 2022 gilt market crisis, Staff working paper No. 1,019, p1.
[225] Bank of England (2023) An anatomy of the 2022 gilt market crisis, Staff working paper No. 1,019, p1.
[226] OBR, Fiscal risks and sustainability report, July 2025.
[227] OBR, Fiscal risks and sustainability report, July 2025, p52.

contribution pension funds believed to be replacing the demand for gilts to the same scale.[228]

CY estimates

7.272   The practical solution being put forward by Kairos and Oxera – to calculate the spread between AAA corporate bonds and gilts – is not obviously the right answer. The proposed approach is not used in the literature, and as we can see from the submissions, there is not a single agreed methodology for calculating the spread. The AAA bonds considered by the CMA in the CMA PR19 Final Report currently trade below the 20-year nominal gilt (see Figure 7.3 below). While this might be in part because these AAA indices have lower durations than the 20-year gilts, this illustrates how such an approach cannot be consistently applied from one price control to the next. AAA corporate bond yields would also include a liquidity and a default premium, which would be expected to account for some of the spread to gilts. We discuss the potential limitations of using AAA bonds further below.

7.273   KPMG arrives at its estimate of 15.5bps for the CY by calculating an average of the Diamond and Van Tassel's (2025) paper CY estimate of 29bps for 2-year nominal bonds (as the upper bound) and KPMG's 2bps CY estimate for 2-year ILGs.

7.274   This approach suffers from the same drawbacks that we identify with the available literature. It places significant weight on estimated CYs for short-dated nominal bonds, relies on certain assumptions to derive the implied CY for 2-year ILGs, and then assumes these figures can be applied to long-dated ILGs.

7.275   Additionally, KPMG's assessment is based on data between 2007 and 2020. It is unclear how a CY estimate for short-term bonds, based on outdated data, can improve the accuracy of the RFR estimate to be used in the five-year price control.

7.276   On using a zero-beta asset[229] rather than estimating an RFR, we do not consider this to be a suitable suggestion in the context of setting an allowed return in a regulated setting. Under the Black (1972) zero-beta CAPM, the RFR is identified with reference to returns on zero-beta portfolios.[230] We consider that using an RFR based on ILGs is more appropriate in the context of the regulated sector considering zero-portfolios can vary significantly over time, are often market-specific (and therefore not reflective of a risk-free rate across markets), and not widely applied in practice and would further subjective assumptions.

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[228] OBR, Fiscal risks and sustainability report, July 2025, p46.
[229] A zero-beta asset is a financial asset whose beta is 0 meaning it carries no systematic risk, has no systematic relationship with the overall market's return and is uncorrelated with market movements.
[230] Black F (1972) Capital Market Equilibrium with Restricted Borrowing. Journal of Business, 45, pp 444–455.

7.277 ILGs are generally accepted to be the closest proxy to a risk-free asset. ILGs do not carry inflation risk that is included in the nominal bonds, they do not exhibit risk premia included in the AAA corporate bonds and therefore remain the best proxy available for an RFR estimate. Adjusting an easily observable ILG for an estimated CY using evidence based on short-dated nominal bonds, in our view, will be subjective and will not provide a more accurate estimate of the RFR. We therefore place sole weight on ILGs and do not agree that this leads to a downward-biased estimate of the RFR.

Brennan CAPM

7.278 The Sharpe-Lintner CAPM is a theory which makes a number of simplifying assumptions, including that investors can borrow and save at the same RFR.[231]

7.279 The Brennan (1971) capital asset pricing framework (**Brennan CAPM**) focuses on the inequality of interest rates faced by borrowers and lenders.[232] Brennan CAPM argues that the divergence of borrowing and lending rates should be incorporated into the market equilibrium model. Brennan CAPM argues that the appropriate RFR for the CAPM lies between the two rates (borrowing and lending).

7.280 In the CMA PR19 Final Report, when estimating the RFR, the CMA took an average between the ILG yield and AAA non-gilt indices yields to estimate the RFR, assuming the ILGs are a reasonable proxy for the RFR faced by lenders, and that AAA corporate bonds are a reasonable proxy for the RFR faced by borrowers.[233]

Ofwat's PR24 FD approach

7.281 Ofwat noted in its PR24 FD that the question of which framework to use has divided regulators. Ofwat concluded that there is benefit in operating a single CAPM framework and a single RFR in terms of simplicity and coherence which has strong backing in previous regulatory decisions and in corporate textbooks.[234]

7.282 In its PR24 FD Ofwat concluded not to use nominal AAA corporate bonds as a proxy for the following reasons.

(a) Ofwat compared its RFR using ILGs to an average of AAA corporate bond yields and ILGs (effectively replicating the PR19 Final Report approach) and found negligible difference between the two.

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[231] Brealey, Myers, Allen, Edmans, Principles of Corporate Finance, 14th edition, chapter 8, p233.
[232] Brennan M J Capital market equilibrium with divergent borrowing and lending rates (1971).
[233] CMA (2021) PR19 Final Report, pp795–796, paragraph 9.264.
[234] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p12.

(b)　Ofwat reviewed KPMG's alternative estimation of the borrowing rate based on spreads for a selection of RPI-linked AAA-rated bonds and found that the weighted-average years to maturity of those bonds to be around eight years and did not match to the maturity of 20-year ILG. Ofwat also reviewed the bid-ask spreads of KPMG's bond sample and found them to be potentially illiquid (noting high bid-ask spreads).

(c)　Ofwat noted its reservation in principle of relying on Brennan CAPM which could bring added complications without a clear solution, with no other jurisdictions using Brennan framework to set the cost of equity.[235]

Parties' submissions

Disputing Companies

7.283　KPMG submitted that since PR19, other UK regulators have broadly followed the CMA PR19 Final Report approach to setting the RFR, citing recent CAA and UREGNI decisions.[236]

7.284　KPMG submitted that the CMA's application of Brennan CAPM and its own proposed adjustment are relatively simple and not a significant departure from the Sharpe-Lintner CAPM. KPMG submitted that its application balances the desirability for an accurate estimate of the RFR that reflects the real world with the need to avoid undue complexity.[237]

7.285　Northumbrian submitted that given stakeholders are familiar with the Brennan model from PR19, accuracy of the RFR estimate should not be compromised in favour of increased simplicity.[238]

> *RFR should reflect the real world, without the adjustment the RFR is downward-biased*

7.286　KPMG submitted that the importance of accuracy is not just about being theoretically correct and consistent with the academic research but is also about real-world relevance to ensure that investors achieve a fair risk-adjusted return in a global marketplace. KPMG argued that the allowed return needs to reflect real-world factors such as differences in the rate at which investors can borrow and save.[239] KPMG argued that failing to adjust for the difference in borrowing and

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[235] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p11.
[236] KPMG (2025) Estimating the Cost of Capital for PR24, p36, paragraph 4.3.24.
[237] KPMG (2025) Estimating the Cost of Capital for PR24, p37, paragraph 4.3.32. Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraph 9.1.5, p40.
[238] Northumbrian (2025) Response to CMA PR24 PD, p93, paragraph 318.
[239] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p40, paragraph 9.1.2.

saving interest rates violates the Brennan framework and results in a downward biased estimate of the RFR.[240]

7.287   Kairos submitted that in practice there may be a difference between the riskless rates at which investors can lend or borrow.[241] They argued that the existence of a material spread between AAA-rated corporate bonds and their government-issued equivalents indicated that there was likely to be a difference between riskless lending and borrowing rates in practice.[242]

Adjustment for saving and borrowing interest rates are not impacted by the level of interest rates or inflation

7.288   KPMG submitted that the recognition of different borrowing and saving rates faced by investors is one of principle, to reflect the real world faced by investors. KPMG argued there is no basis to assume that the Brennan adjustment would apply in 2020 but not in 2025, as the adjustment does not depend on the level of interest rates or inflation.[243]

Estimated adjustment

7.289   KPMG calculated the spread on three AAA RPI-linked bonds and suitably matched ILG, which it found to be 63bps (a small decrease compared to the submission at SoC of 67bps). KPMG used this as its estimate of the adjustment needed to ILG yields to estimate the appropriate borrowing rate.[244]

7.290   KPMG submitted that to proxy the risk-free borrowing rate it is not necessary to adjust for default and illiquidity premia considering these are the reasons why the borrowing rate exceeds the savings rate in reality and even if the adjustments were to be made, the borrowing rate would remain above the saving rate.[245]

Ofwat

7.291   In its response to the statements of case, Ofwat submitted that Kairos and KPMG's approaches implied ranges for the RFR of 2.3% - 2.6%[246] and 2.3% - 2.9% using January 2025 data. Ofwat found these ranges to be overstated

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[240] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, p40, paragraph 9.1.4.
[241] Kairos (2025) Setting the Allowed Return on Equity for PR24, p19, paragraph 49.
[242] Kairos (2025) Setting the Allowed Return on Equity for PR24, p19, paragraph 50.
[243] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraph 9.1.11, p41.
[244] KPMG (2025) Estimating the Cost of Capital for PR24, pp42–43, paragraph 4.4.18.
[245] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraphs 9.1.19–9.1.21, p42.
[246] Kairos' report notes its conclusion that a range of 2.3% to 2.6% is more appropriate than the range based on CMA PR19 approach (of 2.1% to 3.1%) because Kairos assumes that the modelled AAA-rated corporate bond yields are upward biased and the range of 2.3% to 2.6% is more in line with the Brennan CAPM. Northumbrian SoC Kairos (2025) Setting the Allowed Return on Equity for PR24, pp29–30, paragraph 88.

because they departed from the CMA PR19 Final Report approach of taking the midpoint of RFR of borrowers and RFR of lenders at the relevant CAPM horizon.[247]

7.292   Ofwat submitted that in Kairos' and KPMG's analysis the AAA-ILG spreads were based on tenor- or duration-matching which were then applied to the 20-year ILG yield to derive the RFR of borrowing.[248] Ofwat submitted this was inappropriate because AAA-ILG spread is calculated for gilts with tenor much lower than the assumed 20 years.[249] Ofwat also submitted that this practice is unnecessary because AAA-rated indices exist at 10 and 20 year horizons to directly estimate these rates.[250]

7.293   Mason, Robertson and Wright stated that they remained sceptical about the application of Brennan because the estimation of AAA-rated corporate bond yields at appropriate maturity was not straight-forward, with the Disputing Companies not being able to agree on a single approach. Unlike the 20-year ILG, Mason, Robertson and Wright stated that there was no single reference figure the AAA-rated corporate bond yield.[251] Mason, Robertson and Wright continued to hold its view from PR19 of the importance of establishing the identity of the marginal investor.[252]

7.294   Mason, Robertson and Wright also stated that there was another issue which needed to be considered, if the Brennan framework were to be applied. MRW submitted that both borrowers and lenders face spreads (with lenders facing the buy price, and borrowers facing the ask price) and noted that the spread on the risk-free lending rate (taking this to be the ILG yield) is relatively small (around 0.04% of the ask price) comparing to spreads on AAA-rated corporate bonds which are higher: 0.5–0.6% of the ask price.[253] Mason, Robertson and Wright argued that if spreads were taken into account, this would have the effect of reducing the gap between the borrowing and lending rates, and of moving the mid-point of the range closer to the lending rate.[254] Mason, Robertson and Wright continued to advocate for the use of a single RFR.[255]

[247] Ofwat (2025) Response to common issues on risk and return, p93, paragraph 5.33.
[248] Ofwat (2025) Response to common issues on risk and return, p93, paragraph 5.33.
[249] Ofwat (2025) Response to common issues on risk and return, p93, paragraph 5.33.
[250] Ofwat (2025) Response to common issues on risk and return, p93, paragraph 5.33.
[251] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p24, paragraph 3.23.
[252] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p24, paragraph 3.23.
[253] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, pp24–25.
[254] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, pp24–25.
[255] Ofwat (2025) Response to common issues on risk and return, Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p25, paragraph 3.27.

Our assessment and decision

7.295   Sharpe-Lintner CAPM and Brennan CAPM are both theoretical models relying on assumptions. We acknowledge that the Brennan CAPM is a well-accepted and recognised framework. However, the Sharpe-Lintner CAPM is widely used by regulators and practitioners and is simpler to the extent that it assumes one RFR (rather than two).

7.296   In principle, both approaches to estimate the CAPM are acceptable in our view, and simplicity is not the only (or even the main) criterion which should drive methodology choices.

7.297   However, we observe that if we were to directly replicate the approach adopted by the CMA in the CMA PR19 Final Report, the RFR would not be too dissimilar to the estimate we arrived at using our chosen approach. Applying the CMA PR19 Final Report approach now would estimate a borrowing rate of 2.51% (the average of the two iBoxx AAA nominal indices deflated by 2.4%) compared to a lending rate of 2.40% (based on the 20-year ILG). A simple average of the two rates would produce an RFR of 2.46%, only 5.5bps higher than an estimate based just on ILGs.

7.298   As noted earlier, this might be because the AAA corporate bonds have a duration of less than 20 years. Duration is the weighted average time to a bond's cash flows which will typically be lower than a bond's time to maturity, when a bond pays positive coupons. We use zero-coupon government bonds when considering evidence on ILGs or nominal gilts. However, the AAA corporate bonds are typically coupon-paying.

7.299   The average remaining time to maturity of the corporate bonds in the iBoxx GBP non-gilts 10+ and the iBoxx GBP non-gilts 10–15 indices is around 29 years and 12 years respectively,[256] but the average portfolio duration is around 12 and 9 years for the two indices respectively. This clearly introduces a margin for error into any application of Brennan framework, if the borrowing rates are based on AAA corporate bonds. The yields on these indices cannot be directly compared to a 20-year gilt yield, and we cannot assume that the alternative tenor- or duration-matched AAA-gilt spreads, as calculated by the parties, do not change with tenor/duration.

7.300   A further source of potential error is that the AAA yields include other premia, namely liquidity and default risk, and an inflation risk premium, which means that they are likely to be above the true RFR.

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[256] Ofwat (2025) Response to common issues on risk and return, p93, Table 5.3.

7.301   Finally, the AAA bond indices have relatively limited coverage. The iBoxx GBP non-gilts 10+ index consists of 12 bonds with two bonds representing a third of the index (with one bond representing around 20% of the index and another around 14%). The small pool of bonds is mostly issued by international issuers, including the European Investment Bank. The composition of the iBoxx GBP non-gilts 10–15 index raises similar questions. It contains six bonds with two of the largest bonds representing over 55% of the index.

7.302   All of these factors taken together illustrate the uncertainties around calibrating the appropriate borrowing rate in the Brennan framework. Other issues have also been raised, such as the identity of the marginal investor, and the need to account for spreads. Both are valid points in principle, but, leaving theory aside, it is also worth considering the context in which the CMA previously chose to apply the Brennan framework, ie at PR19. In that decision, the CMA 'looked for a helpful marker of the likely ceiling to any potential [RFR] estimate'.[257] The CMA did so using the intuition of the Brennan CAPM, but it did so in the context of negative and falling real interest rates, and ongoing debate around potential downward distortions to ILGs.

RFR should reflect the real world, without the adjustment the RFR is downward-biased

7.303   We consider that using a single easily observable proxy for the RFR is consistent with the general practice in real world settings. While not adopting the Brennan CAPM is a change from the PR19 Final Report approach, the sole reliance on government bonds to estimate the RFR is an approach widely used by regulators and practitioners and is still often described as the primary approach to estimate the RFR in corporate finance textbooks.[258]

7.304   Interest rates are now positive, inflation is continuing to run above target in the UK, and the UK government's fiscal deficit is increasing (potentially increasing the sovereign risk on UK government debt). The arguments around the prevailing ILG rates being below a true RFR are likely to be less strong. While we agree that the difference between lending and borrowing rates is a matter of principle, whether to adjust for it in a regulatory context depends on the relative materiality and the robustness with which such an adjustment can be made.

[257] CMA (2021) PR19 Final Report, p772, paragraph 9.160.
[258] Brealey, Myers, Allen, Edmans, Principles of Corporate Finance, 14th edition, chapter 8, section 8.3. While the empirical on how well the CAPM holds in the real world is mixed, and some of this may be due to its overly stringent assumptions, including a single RFR for borrowers and lenders, the more conventional definition of the CAPM with one RFR is widely used in corporate finance due to its simplicity and ability to generate sensible estimates of the cost of capital.

7.305   With RPI fully aligning to CPIH from 2030, there is also an added benefit of regulatory decisions aligning around the use of ILGs, as in a few years' time, there will be a relatively 'clean' CPIH-based market proxy for the RFR.

7.306   We therefore conclude that using a single RFR, based on the ILGs, is appropriate.

7.307   As can be seen from Figure 7.3 below, real 20-year ILGs are trading at around 2.2% with nominal 20-year gilt trading around 5.3% and the iBoxx indices trading around the 5.0% mark. Once we account for the expected RPI-CPIH wedge of around 0.2% and long-term CPIH inflation of 2.4%, we consider that ILGs do not look out of line with these other benchmarks, once we allow for an inflation risk premium, and other premia driving some of the difference.

Figure 7.3: AAA corporate bond indices, 20Y nominal gilt and 20Y ILG yields

Source: CMA analysis (LSEG Refinitiv and Bank of England data)

CMA RFR estimate

7.308   We estimate an RFR of 2.40%. We use a 1-month average of the 20-year ILG yield adjusted for the RPI-CPIH wedge. We consider that using a single proxy, based on observable market data, is preferable in the current context. We estimate the RPI-CPIH wedge by placing equal weight on the OBR's latest available inflation forecasts and on evidence from inflation swaps. This is consistent with the approach we took in the CMA PR24 PD.

Table 7.9: CMA RFR decision

Parameter	Value
20Y 1-month average ILG	2.18%
RPI-CPIH wedge	0.21%
RFR (CPIH, real)	2.40%

Source: CMA analysis

TMR (ie total market return)

Summary

7.309   We set a TMR range of 6.7% to 7.2%, considering historical ex-ante and ex-post TMR evidence as well as historical ex-post ERP evidence. The lower end of our range is based on the historical ex-ante TMR estimate of 6.7%. The top end of our range is based on historical ex-post ERP estimate of 4.8%, which is added to the RFR of 2.4% to produce an TMR of 7.2%. This methodology is consistent with our approach in the CMA PR24 PD.

Introduction

7.310   The TMR is the total return that investors require for investing in a diversified basket of equities. It is the sum of the RFR and the ERP, which is the part of the TMR that compensates investors for the additional risk associated with investing in equities, rather than in risk-free assets.

7.311   To estimate the TMR it can either be assumed that the TMR is broadly stable,[259] (ie that the total required return from the market is broadly stable), or that the ERP is broadly stable (ie the level at which the market will outperform the RFR is broadly stable). UK regulators, including the CMA in the PR19 Final Report, have typically taken a stable TMR approach and then estimated the ERP as the difference between the TMR and RFR.[260]

7.312   The stable TMR approach has been informed by several academic studies commissioned by regulators (the 2018 UKRN study[261] and the 2003 Mason, Miles and Wright study[262]) in which the authors recommend that regulators assume that the expected TMR is constant over the long run. Figure 7.4 shows a commonly cited piece of analysis to support this assumption.

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[259] A broadly stable TMR approach can also be known as the 'through the cycle' or 'fixed TMR' approach.
[260] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p6.
[261] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators.
[262] Mason, Miles and Wright (2003) A study into certain aspects of the cost of capital for regulated utilities in the UK.

Figure 7.4 : 30-year rolling compound average returns in the USA: 1831-2016

30 Year Rolling Compound Average Returns in the USA: 1801-2016

Data Sources: Siegel from 1800-1900 DMS, 1901-2012, Bloomberg 2013-2016
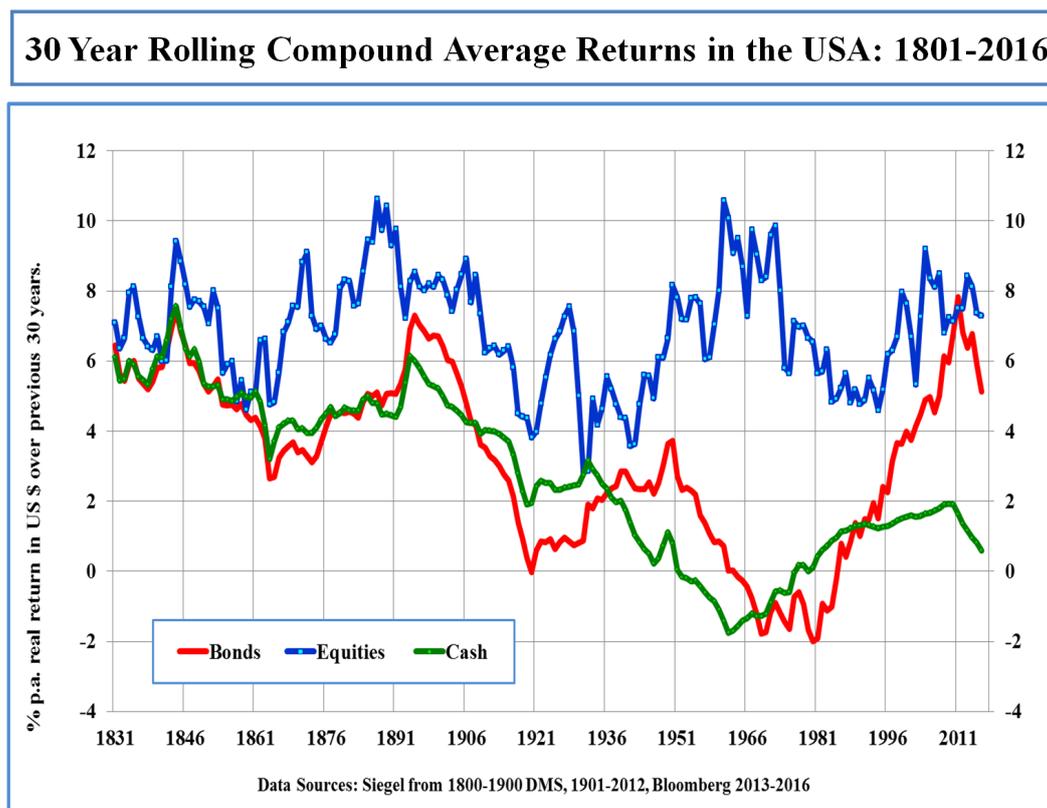
Source: UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p38.

7.313　While average returns on equities do appear more stable than returns on other asset classes (bonds, cash), it is clear from the figure that returns are still highly variable.[263] Further, the 2018 UKRN Study also noted the strengthening evidence base for long-run return predictability, with valuation indicators having some predictive power for future returns.[264] This potentially undermines the assumption that the TMR is stable, and by implication the assumption that the ERP moves precisely one-for-one in the opposite direction to the RFR.

7.314　There is no universally accepted method for deriving the TMR, because it concerns investors' ex-ante expectations of returns, which are largely unobservable. The substantial academic literature on the subject can be categorised into three types:

(a)　studies that assume that historical realised returns are equal to investors' expectations ('historical ex-post' approaches);

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[263] While this evidence is US specific, the 2018 UKRN study also considers the similarity of long-run average returns on the US and the UK market, and concludes that UK, US and World returns follow similar trends (especially in the post World War 2 era), UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, Figure 4.3, p37.

[264] UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p39–41.

(b)   studies that fit models of stock returns to historical data to separate out ex-ante expectations from ex-post good or bad fortune ('historical ex-ante approaches'); and

(c)   studies that use current market prices and surveys of market participants to derive current forward-looking expectations ('forward-looking approaches').

7.315   In this section, we start with a summary of Ofwat's PR24 FD approach and an overview of the parties' submissions. We then discuss each of the key methodologies to estimate the TMR outlined above, taking account of the issues raised. We then discuss arguments in relation to the application of the stable TMR (the 'through the cycle' approach) to estimating returns, including parties' submissions on the issue, before concluding with our decision.

Ofwat's PR24 FD approach

7.316   In the PR24 FD, Ofwat took a stable TMR approach, assuming that the TMR is broadly constant over time and does not change with movements in the RFR. Ofwat noted that the ERP is more unstable than the TMR, and thus that long-run averaging should focus on estimating the latter rather than the former.[265]

7.317   Ofwat estimated its TMR range using historical ex-post and historical ex-ante approaches. Ofwat used the Dimson, Marsh and Staunton (**DMS**) dataset of nominal realised returns from 1900.

7.318   For its historical ex-post range, Ofwat:

(a)   used arithmetic overlapping averages with 10-year and 20-year holding periods. Ofwat noted that it used these longer holding periods due to evidence of negative serial correlation in historical equity returns and to align with its CAPM investment horizon of 10 to 20 years;[266]

(b)   deflated historical returns using a composite CPIH and CED series;[267] and

(c)   estimated a historical ex-post range of 6.87% to 6.98%.

7.319   For its historical ex-ante range, Ofwat:

(a)   used the DMS decompositional and Fama French dividend growth model methodologies to estimate its historical ex-ante TMR range. These methodologies are discussed in more detail in the Historical ex-ante section below; and

[265] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p27.
[266] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, pp32–34.
[267] Ofwat (2022) PR24 final methodology Appendix 11 Allowed return, p29.

(b) estimated a historical ex-ante range of 6.68% to 6.91%.

7.320 Ofwat used the lower end of the historical ex-ante range and the upper end of the historical ex-post range to construct its overall range for its PR24 FD TMR range of 6.68% to 6.98%.

Overview of parties' submissions

Disputing Companies

7.321 Anglian submitted a TMR range of 7.0 to 7.5%, estimated by Oxera. The lower end of the range was based on the historical ex-post arithmetic average TMR with annual holding periods and the upper end of the range reflected Oxera's estimate of the TMR in periods of higher interest rates, which Anglian stated were comparable to current rates.[268]

7.322 Northumbrian[269] and Wessex[270] submitted a TMR range of 6.86 to 6.97%, estimated by Kairos using historical ex-post estimates of arithmetic 1-year averages, and overlapping averages with 10-year and 20-year holding periods from the 2024 DMS dataset.

7.323 South East[271] and Southern[272] included an TMR estimate of 6.93%, based on the historical ex-post method, using a simple 1-year arithmetic average, as estimated by KPMG.[273]

7.324 In response to the CMA PR24 PD, in which we provisionally estimated a range of 6.70% to 7.30%, based on historical ex-post and ex-ante estimates of the TMR as well as historical ex-post ERP estimates, some of the Disputing Companies have provided updated TMR estimates.[274]

Third parties

7.325 MCC Economics, on behalf of CCW, submitted a TMR estimate of 6% using the geometric average plus an uplift. MCC noted a TMR of 6% or 6.5% can also be achieved by putting more weight on Blume, JKM, precedents and non-overlapping estimates.[275]

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[268] Anglian SoC, p195, paragraph 744.
[269] Northumbrian SoC, p154, Figure 51.
[270] Wessex SoC, p89, paragraph 10.12(b), refers to analysis in the Kairos Economics report. Kairos (2025) Setting the Allowed Return on Equity for PR24, p36, paragraphs 113–115.
[271] South East SoC, p82, Table 6.2.
[272] Southern SoC, p457, Table 3.
[273] KPMG (2025) Estimating the Cost of Capital for PR24, p11, paragraph 2.4.1.
[274] Northumbrian included a top end estimate of 7.7%, Response to CMA PR24 PD, p145, paragraph 312–316. KPMG, Southern and South East's adviser, included a range of 6.92–7.80%, Analysis of WACC in the PR24 Provisional Determination Table 9, p71
[275] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p18.

Historical ex-post TMR

7.326 The historical ex-post approach is based on the assumption that expected (real) returns remain constant over time and that historical returns provide a reliable indicator of expected returns in the future. This assessment requires considering the longest available dataset on realised returns since equity returns are very volatile year-on-year. In UK regulatory practice, there is agreement that the DMS dataset[276] of nominal realised returns from 1900 is the best data source. Since the data is available in nominal terms and on an annual basis, there are questions around:

(a) how to deflate the nominal data to CPIH real terms; and

(b) which averaging methodology to use.

Deflating nominal returns

7.327 In the PR24 FD, Ofwat used a composite Consumption Expenditure Deflator (CED)/CPIH series to deflate historical returns.[277]

(a) Data from 1900–1949: Ofwat used the composite CPI series constructed by O'Donoghue et al. (2004) and also featured in the 'Original CPI' series of the Bank of England's Millennium Dataset. This is based on the CED developed by Feinstein (1972).

(b) Data from 1950–1988: Ofwat used the ONS' updated May 2022 modelled back-series of CPIH.

(c) Data from 1988 onwards: Ofwat used the ONS CPIH All Items inflation series.

7.328 There is agreement between Ofwat and the Disputing Companies on using the composite CED/CPIH series to deflate nominal returns to CPIH real.

7.329 The choice of appropriate inflation indices has been extensively debated in previous regulatory decisions (including in the CMA PR19 Final Report). Since then, a consensus has emerged amongst regulators on the use of the CED dataset for the period up to 1949, consistent with the CMA PR19 Final Report. For the period 1950–1988, several choices exist: the ONS' 2022 modelled series of CPIH, the Bank of England's or the ONS' modelled historical CPI, and outturn RPI.[278]

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[276] Data available to purchase from Dimson, Marsh and Staunton (2025) Global Investment Returns Yearbook 2025.
[277] Ofwat (2022) PR24 final methodology Appendix 11 Allowed return, p29.
[278] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p18.

7.330   Given that we are estimating a CPIH-real WACC and that a backcast series for CPIH is now available for 1950–1988, we agree with Ofwat's methodology and use the CED/CPIH series to estimate the CPIH real historical ex-post TMR. However, we note that given the long lookback period for the nominal TMR data, inevitably all historical inflation measures will be imperfect, adding another source of uncertainty around the real TMR estimates.

Averaging methodology

7.331   In estimating the expected return, the theoretically correct measure is the arithmetic mean.[279] This is in line with the approaches adopted by Ofwat and the Disputing Companies. Various estimation techniques exist to estimate the arithmetic mean from historical data.

7.332   Ofwat and the Disputing Companies have relied on arithmetic averages of historical returns. This was also the approach used in the CMA PR19 Final Report.

7.333   In the PR24 FD, Ofwat used overlapping arithmetic averages to estimate the historical ex-post TMR.[280] Ofwat did not place weight on non-overlapping estimators or geometric averages in its historical ex-post TMR range. Ofwat noted that non-overlapping averages can be volatile, vulnerable to small sample issues and overall do not add useful information to the overlapping estimator of the same horizon.[281] In its PR24 methodology, Ofwat proposed a geometric to arithmetic conversion cross-check but did not place weight on this in its historical ex-post TMR range.[282]

7.334   The Disputing Companies and their advisers all used arithmetic averages to estimate the historical ex-post TMR range. KPMG and Oxera used 1-year holding periods which are non-overlapping. Kairos used overlapping averages.

7.335   A key issue with using arithmetic averages is whether to use a simple 1-year average of returns, or a multi-period average. The DMS historical equity returns data is on an annual basis, but the CAPM investment horizon is typically longer in a regulatory context (as discussed in the Risk-free rate section, we consider it to be closer to 20 years in water). The argument is primarily about whether there is evidence of negative serial correlation[283] in the historical data. If there is evidence of negative serial correlation, this suggests longer holding periods should be used.

[279] Damodaran (2023), Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – the 2023 Edition.
[280] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p36.
[281] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p35.
[282] Ofwat (2022) PR24 final methodology Appendix 11 Allowed return, p36.
[283] Serial correlation (or autocorrelation) refers to the degree of correlation of variables between two (or more) different observations. Negative serial correlation would indicate that a period of high returns is likely to be followed by a period of low returns, and vice versa. In the Parties' views below we use the term serial correlation as this was included in the Parties' submissions, in this case the term is interchangeable with the term negative serial corelation.

This is because a 1-year holding period average would be an upwardly-biased estimator of the true arithmetic mean.

7.336 Academic literature also offers other approaches to estimating the arithmetic mean, such as the Blume[284], JKM[285], and Cooper[286] estimators, which account for parameter uncertainty in the estimation. These approaches may offer a broader range of values for the TMR, but they require an assumption on whether the TMR is being estimated from an investor or a capital budgeter perspective.

7.337 In the CMA PR19 Final Report, the decision to use arithmetic averages (1-year, 10-year and 20-year), was justified on the grounds that arithmetic averages were simple and transparent, that there was no reason to prefer the perspective of either that of the capital budgeter or of the portfolio investor, and that these additional estimates from the literature (Blume, JKM, Cooper) would give a similar mid-point to the simple arithmetic averages.[287]

Parties' submissions

Disputing Companies

7.338 Kairos, Wessex and Northumbrian's advisers, estimated the historical ex-post TMR using the 1-year arithmetic average, and overlapping arithmetic averages of 10- and 20-year returns, given the statistical and data-driven complexities with conditional TMR estimates, particularly over 10 to 20-year time horizons, and the regulatory precedent of using long-run ex-post approaches to set TMR.[288]

7.339 KPMG, Southern and South East's advisers, estimated the historical ex-post TMR using a 1-year simple arithmetic average.[289] KPMG noted that there was no statistically significant evidence of serial correlation at 5% significance level in UK real returns used for TMR estimation based on its empirical analysis.[290] KPMG also stated that the regulatory WACC serves a dual purpose: it facilitates investors in calculating the expected future value of their investments in regulated companies, and it assists regulated companies in determining present values for capital budgeting decisions. KPMG stated that to represent a neutral rate, the TMR estimate must be free of any assumptions regarding holding periods,

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[284] Blume, M (1974), 'Unbiased Estimators of Long-Run Expected Rates of Return', Journal of the American Statistical Association, Vol. 69, No. 347, pp. 634–638

[285] Jacquier, E, Kane, A, and Marcus, A (2004), Optimal Estimation of the Risk Premium for the Long Run and Asset Allocation: A Case of Compounded Estimation Risk.

[286] Cooper, I (1996), 'Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting', European Financial Management, Vol. 2, No. 2

[287] CMA (2021) PR19 Final Report, pp818–819, paragraphs 9.326–9.238.

[288] Kairos (2025) Setting the Allowed Return on Equity for PR24, p36, paragraph 113.

[289] KPMG (2025) Estimating the Cost of Capital for PR24, p51, paragraph 5.1.11.

[290] KPMG (2025) Estimating the Cost of Capital for PR24, p51, paragraph 5.1.7.

investment horizons, and reinvestment patterns and therefore a 1-year holding period was appropriate.

7.340 Oxera, Anglian's advisers, concluded that using a 1-year arithmetic average remains a more robust estimation methodology.[291] Oxera also stated it found no statistically significant serial correlation in the returns.[292]

Ofwat

7.341 Ofwat submitted that it continued to consider UK historical returns to be characterised by serial correlation.[293] Ofwat none the less noted that its use of 10-year and 20-year holding periods for estimating historical ex-post TMR was not reliant on a statistically significant finding of serial correlation in the data. Ofwat submitted that it is reasonable to consider holding periods aligned with the 10–20-year horizon used in its implementation of the CAPM.[294]

7.342 In response to the CMA PR24 PD, Ofwat submitted that our PD included a radically reduced number of TMR estimates compared to the CMA at PR19. Ofwat stated that when considering the distribution of datapoints from the range of ex-ante and ex-post CPIH-real estimates considered as part of the CMA PR19 Final Report, the PR24 provisional determinations midpoint of 7.00% is significantly above the median for all TMR estimators of 6.79%.[295]

Our assessment and decision

7.343 We start by considering the 1-year arithmetic average and 10-year and 20-year overlapping arithmetic averages, as this encompasses the range of TMR estimation techniques used by Ofwat and the Disputing Companies.

7.344 We share Ofwat's reservations about the use of non-overlapping averages, given the low number of data points, and the volatile and often counterintuitive nature of the results produced, and therefore, do not present these figures.

7.345 We set out below the latest estimates of the 1-year arithmetic average and 10-year and 20-year overlapping arithmetic averages, using the latest 2025 DMS dataset.

[291] Oxera (2025) PR24 Cost of equity estimation, p37.
[292] Oxera (2025) PR24 Cost of equity estimation, p37.
[293] Ofwat (2025) Response to common issues on risk and return, p100, paragraph 5.60.
[294] Ofwat (2025) Response to common issues on risk and return, p100, paragraph 5.58.
[295] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp17–18, paragraphs 4.25–4.26.

Table 7.10: Historical ex-post TMR estimates, 1900-2024 CPIH-real

Holding period	Arithmetic mean
1 year	6.92%
10 years	6.84%
20 years	6.95%

Source: CMA analysis of DMS 2025 data

7.346   We note that the 1-year non-overlapping, 10-year and 20-year overlapping arithmetic averages are similar, with only 11bps difference between the lowest (10-year) estimate and highest (20-year) estimate. Furthermore, submissions (from Kairos) using the 10-year and 20-year arithmetic averages take an average of the two estimates to inform the ex-post TMR resulting in only a 3bps difference between using a 1-year holding period compared to placing weight on 10- and 20-year holding periods.

7.347   The CMA has previously recognised that where returns are serially correlated and investors have a holding period of more than a year, the arithmetic average return for a single year will be an upwards biased estimator of returns.[296] This is the main reason for considering historical averages of multi-period returns, to ensure the TMR estimate is not biased upwards. Even if there is no statistically significant serial correlation in returns, the premise of a broadly stable TMR approach is predicated on there being some mean reversion in returns over time.

7.348   It is therefore potentially counter intuitive that the 20-year arithmetic average is higher than the 1-year arithmetic average. This was an issue raised during the Hearings where Oxera stated that the assumption that going for longer holding periods means that investors require a lower return is not borne out by the data. Oxera noted that the 10-year methodology splits up 124 years of DMS data into ten-year chunks which are then geometrically averaged over those ten years. Then the calculation overlaps all of those ten years. This results in geometric averaging which moves away from the arithmetic average. There is also uneven sampling of the data because years 1 to 9 are given less weight, as are years 116 to 124. Oxera concluded that it is not clear that chopping up all the data gives any additional information to just simply averaging the annual returns.[297]

7.349   The difference between the various estimates is not large but nonetheless raises questions about the robustness of the overlapping averages. We conclude that while in principle, it is reasonable to consider the evidence on multi-period holding averages when the assumed investment horizon is longer than one year, in the current context we are not persuaded that including the 10-year and the 20-year overlapping averages materially improves the reliability of our historical ex-post

[296] CMA (2021) PR19 Final report, p819, paragraph 9.329.
[297] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p41, line 20 to p42, line 10.

TMR estimates. We conclude using the simple 1-year arithmetic average is preferable due to its simplicity and transparency.

7.350   In relation to Ofwat's response about the reduced number of TMR datapoints used in the CMA PR24 PD, Ofwat submitted the following graph, which included several additional historical ex-post TMR estimates, such as the geometric average, non-overlapping averages, and the Blume, JKM, and Cooper estimates.

Figure 7.5: Ofwat analysis of ex-ante and ex-post TMR estimates
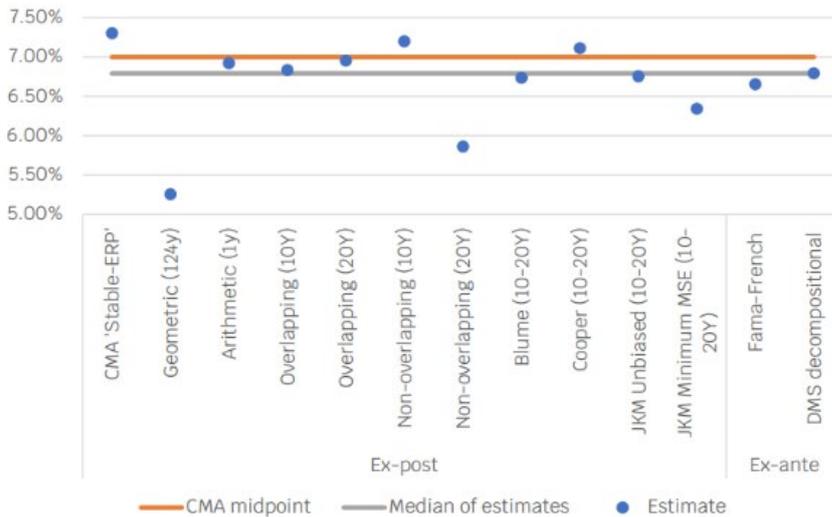
Source: Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, Figure 3 p18.

7.351   In our view, these additional historical ex-post TMR estimates suggested by Ofwat do not provide further information for our historical ex post TMR range. With the exception of two outliers, geometric 124-year and non-overlapping 20-year average (which Ofwat itself previously dismissed as unreliable),[298] the Blume, Cooper and JKM estimators point in different directions, but on average are not far off our historical ex-post 1-year average of 6.9%. We also explained earlier (paragraphs 7.343 to 7.349) why it was difficult to assess how much weight to give to each of these estimators in isolation.

7.352   On balance, having considered the various estimators available to us, we conclude that placing most weight on the simple 1-year arithmetic average is appropriate in the context of this redetermination.

Historical ex-post – conclusion

7.353   Our historical ex-post TMR estimate is 6.9%.

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[298] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p25.

Historical ex-ante

7.354   There are two primary methodologies for estimating the historical ex-ante TMR, the DMS decompositional methodology and the Fama French dividend growth model.

7.355   The DMS decompositional methodology infers the TMR by breaking down the historical equity premium into elements that correspond to investor expectations and elements of non-repeatable good or bad luck. These elements are the mean dividend yield, the growth rate of real dividends and the expansion of the price/dividend ratio. The first two elements are taken to inform investors' expectations, while the latter is considered to be 'non-repeatable', at least in expectation.

7.356   Fama and French used a dividend growth model to break-down historical returns into an underlying expected return, equal to the average dividend yield plus the average dividend growth rate, and an unexpected return (comprising capital gain in excess of the rate of dividend growth).

7.357   Ofwat included both of these methodologies in its TMR analysis in the PR24 FD.

7.358   None of the Disputing Companies placed weight on historical ex-ante estimates in the TMR ranges included within their statements of case. The Disputing Companies argued that we should not place weight on historical ex-ante approaches as they required subjective assumptions.[299] Some of the Disputing Companies restated this view in response to the CMA PR24 PD.[300]

7.359   However, there is general agreement between the Disputing Companies and Ofwat on the historical ex-ante methodologies and assumptions. In their Draft Determination responses Anglian,[301] South East,[302] Southern[303] and Wessex[304] included a TMR range of 6.74-6.93% based on analysis undertaken by KPMG.[305] The bottom end of the KPMG range was informed by historical ex-ante TMR estimates, 6.68–6.82%, using the Fama French dividend growth model and DMS decompositional methodology.

7.360   Northumbrian also placed weight on historical ex-ante estimates in its Draft Determination response,[306] based on analysis undertaken by Kairos.[307] Kairos

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[299] Anglian SoC, paragraph 801(ii). Northumbrian SoC, paragraph 584. Southern SoC, p45, paragraph 59. Wessex SoC, paragraph 10.12(b).
[300] South East (2025) Response to CMA PR24 PD, paragraph 6.18. Southern (2025) Response to CMA PR24 PD, paragraph 7.77.
[301] Anglian (2024) Anglian Water PR24 Draft Determination Representations, p134.
[302] South East (2024) South East Water Draft Determination Response – Financial Issues, p24.
[303] Southern (2024) Southern Water Draft Determination Response, p208.
[304] Wessex (2024) Wessex Water Draft Determination Response – Risk and return annex, p25.
[305] KPMG (2025) Estimating the Cost of Capital for PR24, p47.
[306] Northumbrian (2024) Northumbrian Water Draft Determination Response, p36, paragraph 143.
[307] Kairos (2024) A review of Ofwat's Total Market Return at PR24, p6, Table 2.

also used the Fama French dividend growth model and DMS decompositional methodology to derive an historical ex-ante TMR range of 6.85–6.92%.[308] Kairos' analysis varied from KPMG's due to differing definitions of trailing dividend yield used.

7.361   The Fama French and DMS decompositional methodologies submitted by KPMG in response to the Draft Determination were adopted by Ofwat in its PR24 FD.[309] Ofwat noted that the KPMG definition of the trailing dividend yield corresponded to the definition used by the curators of the DMS dataset, which is why Ofwat incorporated ex-ante estimates from KPMG rather than Kairos. [310]

7.362   Fama and French highlight that the average stock return is equal to the average dividend yield plus the average rate of capital gain. They then note that, assuming that the price-dividend ratio is mean-reverting over a long period of time the compound rate of dividend growth can be expected to approach the compound rate of capital gain, such that the expected stock return would be equal to the average dividend yield plus the average growth rate of dividends.[311] They use this model to breakdown historical returns into an underlying expected return, equal to the average dividend yield plus the average dividend growth rate, and an unexpected return (comprising capital gain in excess of the rate of dividend growth).

7.363   The Fama French methodology uses arithmetic averages for dividend yield and growth rate. When projected forward these averages yield an equivalent of an expected geometric return. It is necessary to then apply an adjustment to account for the fact that dividend growth is less volatile than price growth.

7.364   The DMS decompositional approach is similar to the Fama French dividend growth model methodology. The DMS decompositional methodology estimates the geometric average of the dividend yield and adjusts for the geometric growth rate of real dividends and a geometric-to-arithmetic conversion.[312]

7.365   We agree with the Disputing Companies that there is some judgement involved in the estimation of the historical ex-ante approaches, due to adjustments made for past good or bad luck in historical returns. However, we consider that they still provide a useful reference point for our overall TMR range.

7.366   Given the methodologies used by the Disputing Companies earlier in the PR24 process were later adopted by Ofwat in its PR24 FD we view these methodologies

[308] Kairos (2024) A review of Ofwat's Total Market Return at PR24, p6, Table 2.
[309] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p31.
[310] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p31.
[311] Fama, Eugene F and French, Kenneth, R, (2001) The Equity Premium.
[312] Estimated as half the variance of the log return of the equity total return index.

as uncontroversial and implement these to estimate our historical ex-ante TMR range, updating for the 2025 DMS dataset.

7.367   We note that there is a slight difference in the Fama French estimate used by Kairos compared to the other Parties. The difference relates to the assumption on whether the DMS data assumes dividends are continually reinvested or not. Depending on the assumptions underpinning the DMS data, additional adjustments may be required to ensure the inputs are compatible with the Fama-French calculation. If the dividend stream is assumed to be continually reinvested, DMS inputs can be used in the Fama-French without adjustment. If the dividend stream is assumed to be reinvested once at the end of the year, it needs to be divided by the opening price index. DMS does not explicitly state the assumed method, however we note that KPMG[313] stated that the DMS authors clarified that pre-1955 data assumes annual reinvestment, while post-1955 data assumes dividends are reinvested when received (although monthly data is not available). We therefore do not apply an adjustment for reinvestment of dividends post 1955. This is consistent with the approach taken by KPMG, and adopted by Ofwat in its FD.

7.368   Table 7.11 and Table 7.12 set out the Fama French dividend growth model and DMS decompositional methodology for estimating the historical ex-ante TMR using the 2025 DMS dataset.

Table 7.11: Fama French dividend growth model, DMS data (real, CPIH)

	Fama-French DGM approach	
Average dividend yield	4.41%	A
Average dividend growth rate	1.72%	B
Bias adjustment	0.53%	C
Ex-ante TMR (arithmetic)	6.65%	D=A+B+C

Source: CMA analysis of DMS 2025 data

Table 7.12: DMS decompositional, DMS data (real, CPIH)

	DMS decompositional approach	
Geometric mean dividend yield	4.55%	A
Growth rate of real dividends	0.64%	B
Geometric-to-arithmetic conversion	1.61%	C
Ex-ante TMR (arithmetic)	6.79%	D=A+B+C

Source: CMA analysis of DMS 2025 data

7.369   Our historical ex-ante TMR range is 6.7–6.8%. These estimates are not significantly lower than the historical ex-post TMR. This is in part because specifically for the UK market, the expansion of the price/dividend ratio (the re-

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[313] KPMG (2025) Estimating the Cost of Capital for PR24, p54, footnote 108.

rating of equities) has been a relatively modest contributor to the historical ERP.[314] However, we consider it is still useful to include these estimates in our range. The TMR is highly uncertain and the literature around historical levels of returns potentially being high relative to expectations is relatively well-established.[315]

Forward-looking approaches

7.370 Ofwat did not place weight on forward-looking approaches when estimating its PR24 FD TMR range.[316] None of the Disputing Companies suggested forward-looking approaches in their statements of case.

7.371 Forward looking approaches to estimate TMR require subjective judgements and different input assumptions can result in a wide TMR range. The UKRN guidance recommends that the TMR should be primarily based on historical ex-post and historical ex-ante evidence.[317] We agree that forward-looking approaches are generally too subjective for use in regulatory WACC determinations, and therefore, we do not consider such approaches in deriving our TMR range.

Through the cycle approach

7.372 As set out above, UK regulators have typically taken a 'through the cycle' approach to estimating TMR which assumes that the TMR is more stable than the ERP. This approach is consistent with the UKRN's guidance, however, UKRN's guidance also sets out that 'it is important to recognise that depending on the macroeconomic environment, this largely 'through the cycle' approach could either overstate or understate returns required by investors in a specific price determination'.[318] This is because a stable TMR approach implicitly assumes that required equity returns are not particularly sensitive to movements in interest rates, while in practice there is likely to be some positive relationship between real interest rates and real returns on equity.[319]

7.373 In the CMA PR24 PD, having considered the Parties' arguments on the application of the 'through the cycle' approach and recognising the risk of understating future returns in the current macroeconomic environment, we also considered evidence on the historical ex-post ERP to calibrate the TMR range. Giving weight to historical ex-post evidence assumes that long-run historical evidence on realised ERP can be a useful guide to the future (and is therefore implicitly consistent with a 'stable ERP' view). Giving some weight to that evidence meant that we were

[314] Dimson, Marsh and Staunton (2025) Global Investment Returns Yearbook 2025, p92, Table 13.
[315] For example, as discussed in CMA (2021) PR19 Final Report, p822, paragraph 9.339.
[316] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p23.
[317] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p21.
[318] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p19.
[319] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p20.

recognising the possibility of there being a positive relationship between real equity returns and risk-free rates.

7.374   We incorporated ERP evidence in our TMR range taking account of the historical ex-post ERP of 4.8% which, combined with our PD RFR of 2.5%, implied a TMR of 7.3%.

Parties' submissions

Disputing Companies

7.375   All of the Disputing Companies submitted that Ofwat's 'through the cycle' approach to TMR is not appropriate given the increases in interest rates since Ofwat's FD.

7.376   Anglian submitted that Ofwat's TMR does not correctly reflect returns for PR24. Anglian stated that the 'through the cycle' approach to TMR ignores the requirement for the sector to attract new equity in a high-interest rate environment.[320] Anglian challenged that Ofwat had assumed long-term investors will invest even when expected returns are below the cost of capital, in the expectation that 'the tide will turn'.[321]

7.377   Anglian also noted that in practice Ofwat has not used a constant TMR in previous price controls and TMR has reduced by nearly 1.5% over the last five price controls.[322]

7.378   Northumbrian noted that whilst Kairos (its advisers) and Ofwat rely on the assumption that TMR is more stable than ERP, TMR at PR24 may be above the TMR at PR19, owing to the significant increase in RFR between the two periods.[323]

7.379   Wessex noted that Ofwat had given no weight to the possibility that the TMR has moved higher in response to the emergence of 'higher-for-longer' interest rates.[324]

7.380   South East submitted that it may be appropriate to drop the generally agreed long-term historical approach to TMR. South East noted that the 'higher-for-longer' interest outlook will have resulted in a step up in expected returns on all asset classes, including stock market investments.[325]

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[320] Anglian SoC, paragraph 737.
[321] Anglian SoC, paragraph 739.
[322] Anglian SoC, paragraph 742.
[323] Northumbrian SoC, paragraph 584.
[324] Wessex SoC, paragraph 10.12(b).
[325] South East SoC, paragraph 6.23.

7.381　Oxera, Anglian's advisers submitted a TMR range which reflected a move away from the 'through the cycle' approach. Oxera submitted that the upper end of the TMR range needs to be increased towards the CPIH-real equivalent TMR assumptions made by Ofwat in PR04 (8.3%) and PR09 (7.9%), when interest rates were last similar to current levels. Oxera submitted a TMR range of 7.0-7.5% CPIH-real.[326]

7.382　The Disputing Companies all supported our provisional decision to place some weight on ERP evidence in our provisional TMR range.[327]

7.383　Northumbrian,[328] Southern[329] and KPMG[330] stated that our 4.8% ERP estimate was likely to underestimate the implied ERP from the DMS dataset. They submitted that this was because we subtracted the realised return on a long-run bond series from annual TMR returns to derive ERP. They noted that the realised return on the portfolio of government bonds that is compiled by DMS is not risk free because it includes both inflation and interest rate risk at an annual horizon.

7.384　South East[331] noted that there should be consistency between the risk-free return used in the calculation of the ERP and the risk-free return used in the CAPM calculation. They stated this would avoid a 'pick n mix' approach using a historical equity risk premium and a forward looking RFR.

7.385　Wessex suggested we consider a number of cross-checks on the ERP including the calculation of a stable ERP value using equity returns and historical ILG data to the extent that is it available.[332]

Ofwat

7.386　Ofwat submitted that Oxera's approach to base its TMR range on TMR estimates from PR04 and PR09, significantly misrepresents Ofwat's historical regulatory policy and risks embedding parameter-level aiming up. Ofwat also noted that Oxera's proposed approach was a clear departure from established norms of TMR estimation in UK regulation, given the ex-post and ex-ante evidence suggested figures entirely below Oxera's range.[333]

7.387　Ofwat submitted that approaches that use a TMR based on combining a long-run estimate of the ERP with a contemporary estimate of the RFR are commonplace,

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[326] Oxera (2025) PR24 Cost of equity estimation, p38, section 4.4.
[327] Anglian (2025) Response to CMA PR24 PD, paragraph 559-560. Northumbrian (2025) Response to CMA PR24 PD, paragraph 312-316. South East (2025) Response to CMA PR24 PD, paragraph 6.17. Southern (2025) Response to CMA PR24 PD, paragraph 7.78-7.81. Wessex (2025) Response to CMA PR24 PD, paragraph 8.50.
[328] Northumbrian (2025) Response to CMA PR24 PD, paragraph 313.
[329] Southern (2025) Response to CMA PR24 PD, p145, paragraph 7.80.
[330] Southern's Response to CMA PR24 PD, KPMG Analysis of WACC in the PR24 Provisional Determinations, November 2025, paragraph 10.2.7
[331] South East (2025) Response to CMA PR24 PD, pp91-92, paragraphs 6.20-6.23.
[332] Wessex (2025) Response to CMA PR24 PD, p10, paragraph 8.3.
[333] Ofwat (2025) Response to common issues on risk and return, pp104–105, paragraph 5.71.

particularly in Europe and in the Antipodes. Ofwat noted it used this approach up to and including PR09, and moved to a stable, or 'through the cycle' TMR approach at PR14.[334]

7.388   In response to CMA PR24 PD, Ofwat submitted that the use of the 'stable ERP' approach:[335]

(a)   undermines government-supported regulatory efforts to promote consistency in WACC-setting methodologies;

(b)   does not offer the clear prospect of a more accurate TMR estimate; and

(c)   overturns established risk-sharing arrangements between customers and companies, undermining the legitimacy of the regulatory framework and the credibility of future risk-sharing initiatives.

7.389   Ofwat stated that the CMA's proposal to place weight on the 'Stable-ERP' approach would seem to cut across regulatory efforts to increase consistency in decision-making on the WACC. Ofwat noted that our provisional determinations do not seem to have considered the sustainability of the TMR estimation approach in lower interest rate environments.[336]

7.390   Mason, Robertson and Wright, Ofwat's academic advisers, noted that the ERP is much harder to measure than the TMR, which makes it hard to draw clear-cut data-based conclusions about its properties.[337] Mason, Robertson and Wright noted that the ex post value of the ERP has to be inferred, as the difference between the TMR and some estimate of the risk-free rate but (for the UK) before 1981, when inflation-protected government bonds were first issued, there was no risk-free rate in real terms, due to inflation risk. Mason, Robertson and Wright submitted that the longest dataset for estimating the ex-post ERP is, therefore, (at most) a little over 40 years in the UK.[338]

7.391   Mason, Robertson and Wright submitted that the ex-post ERP is counter-cyclical while the risk-free rate is pro-cyclical. Mason, Robertson and Wright explained that this empirical observation is intuitive: risk premia rise in recessions; risk-free rates rise in booms; the combination of counter-cyclical risk premia and pro-cyclical risk-free rates means that the ERP and the RFR are negatively correlated.[339]

[334] Ofwat (2025) Response to common issues on risk and return, p105, paragraph 5.72.
[335] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p12, paragraph 4.11.
[336] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp12-13, paragraph 4.12-4.13.
[337] Mason, Robertson and Wright (2025) Comments on the allowed return on equity in the CMA's Provisional Determination for PR24, paragraph 2.1.2.
[338] Mason, Robertson and Wright (2025) Comments on the allowed return on equity in the CMA's Provisional Determination for PR24, paragraph 2.11.
[339] Mason, Robertson and Wright (2025) Comments on the allowed return on equity in the CMA's Provisional Determination for PR24, paragraph 2.18-2.19.

7.392   Mason, Robertson and Wright stated that the most recent evidence suggests that the ERP is currently unusually low. Mason, Robertson and Wright referenced work by the Bank of England which finds ERP estimates to be highly volatile, and that the ERP was close to an all-time low at the end of 2024, at least according to the UK and Euro area option-implied ERP measures. Mason, Robertson and Wright also noted that this conclusion was supported by analysis of cyclically adjusted price-to-earnings (CAPE) ratios.[340] [341]

7.393   Mason, Robertson and Wright submitted that there is a risk of aiming up twice: first, by pushing up the upper estimate of the TMR; secondly, by choosing a point above the mid-point of the widened range. Mason, Robertson and Wright stated that the appropriate place for aiming up is at the end, as part of the in-the-round judgement about whether aiming up is necessary, and if so, to what extent. They noted that this is the most consistent and transparent way of arriving at the allowed cost of equity.[342]

Third parties

7.394   MCC Economics, on behalf of CCW, stated that now was not the time to move from a fixed TMR to a fixed ERP framework. MCC noted that doing so may subject customers to windfall loses after supporting relatively high returns on equity. Such a change would also not be consistent with the principle of regulatory consistency and predictability.[343]

7.395   MCC Economics also referenced CAPE analysis, noting that if CAPE is higher (or lower) subsequent returns tend to be lower (or higher). MCC stated that our PR24 PD approach was inconsistent with 35 years of observed 10-year returns, because a current CAPE of about 37 should, history suggests, yield a return closer to zero than 7% in real terms.[344]

7.396   Citizens Advice submitted that consumers have funded an over-estimate of the cost of equity during lower interest periods on the basis that the stable TMR approach would be maintained and this would be offset during higher interest rate periods. Citizens Advice added that it is not fair or robust to make a methodological change partway through the cycle and the approach fails to meet the principles of regulatory stability and predictability and so undermines confidence in the regulatory framework.[345]

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[340] The CAPE ratio is a valuation measure that uses real earning per share over a 10-year period to smooth out fluctuations in profits.
[341] Mason, Robertson and Wright (2025) Comments on the allowed return on equity in the CMA's Provisional Determination for PR24, paragraph 2.24-2.25.
[342] Mason, Robertson and Wright (2025) Comments on the allowed return on equity in the CMA's Provisional Determination for PR24, paragraph 2.8.
[343] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp17–18.
[344] CCW (2025) Response to CMA PR24 PD, MCC review appendix, p14.
[345] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 31.

7.397   Frontier Economics, on behalf of the Energy Networks Association, submitted that we underestimated the long-term ERP in our PD. Frontier noted the 5.3% nominal ERP calculated by DMS. Frontier stated that the approach to measure the ERP in this dataset is to take the difference between the return on equity and return on bonds, and that the choice of inflation series should not have a material (if any) impact on the estimate of the ERP if the same inflation series is used to deflate both the equity returns and bond returns.[346]

Our assessment and decision

7.398   As set out in the Risk-free rate section above, the RFR has increased by approximately 90bps from Ofwat's decision. However, the TMR using historical ex-post and ex-ante methodologies has remained broadly unchanged, with the more robust estimates all within a tightly defined range. The relative stability and the narrowness of the range leave relatively little flexibility to reflect changes in macroeconomic conditions in the allowed return on equity.

7.399   In the statements of case, the Disputing Companies made general arguments on the use of the 'through the cycle' approach and mostly relied on cross-check evidence to substantiate the claim that required returns have gone up further than implied by Ofwat's application of the CAPM.

7.400   Oxera proposed, on behalf of Anglian, to place weight on Ofwat's previous TMR decisions, from PR04 and PR09, to inform the TMR estimate for PR24, as a way to address the potential for understating returns under a 'through the cycle' approach.

7.401   While previous regulatory decisions can provide a helpful reference point, we do not consider this a robust approach, for the following reasons.

(a)   **Available data**. The data available for TMR analysis has moved on since these regulatory decisions. There is an additional 15–20 years of data available since. More importantly, the approach to deflating nominal returns has changed. As set out above, there is now general agreement on the use of the composite CED/CPIH series to deflate historical returns. This has led to generally lower TMR estimates.

(b)   **Inflation**. Ofwat's PR04 and PR09 decisions were set in RPI real terms. This contrasts with the current approach, where cost of capital decisions for PR24 are set in CPIH-real terms. Oxera included a CPIH-real estimate of 7.9% for the PR09 TMR decision. Ofwat's PR09 RPI-real TMR was 7.4%. Oxera has converted this to CPIH-terms using a 0.5% RPI-CPIH wedge (based on 2.5%

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[346] Frontier Economics (2025) Response to the CMA's proposed PR24 PD TMR methodology using fixed ERP to CMA PR24 PD, pp2-4.

RPI347 assumed in the PR09 decision and 2.0% CPIH used in Oxera's WACC analysis).[348] There is significant uncertainty regarding what inflation measures should be used to adjust these figures and converting an RPI-real estimate to CPIH-real terms using the assumed inflation in the price control could result in an over or underestimate of the TMR in CPIH-real terms.

(c) **Parameter level aiming up**. At PR09 Ofwat chose the top end of its ERP range, noting that doing so reflected its view that it should assume a high ERP given the economic conditions at the time within which the cost of capital is set.[349] We do not consider it appropriate to reflect Ofwat's parameter level aiming up from previous price reviews in our ERP/TMR range. We set out our assessment of the available market data and arguments for and against the need to aim-up at the cost of equity level later in this chapter.

7.402 Other than the cross-check evidence and Oxera's proposal to use TMR precedent, parties did not put forward alternatives to address potential issues with the 'through the cycle' approach in their statements of case. Nonetheless, the material movement in interest rates since Ofwat's PR24 FD has prompted us to consider this issue more carefully. We observe that in Ofwat's PR24 FD, the implied ERP was in the range of 5.2–5.5% (CPIH-real). Accounting for the movements in the RFR since Ofwat's FD, the implied ERP range reduces to 4.3-4.6%.

7.403 While the levels of ERP have not been discussed extensively in recent regulatory decisions, we consider it is important to consider the implied ERP when estimating the cost of equity, even if we recognise that the TMR is more stable empirically than the ERP (as discussed in paragraphs 7.310 to 7.313).

7.404 Considering the history of Ofwat decisions specifically, Ofwat itself stated that it used a 'stable ERP' approach in PR04 and PR09 (as noted earlier). Ofwat also considered ERP evidence in PR14, even if it did not give as much weight to it and was primarily estimating the TMR directly.[350]

7.405 As further context, Figure 7.6 sets out the implied ERP of previous regulatory decisions in the UK over the last twenty years, as well as the rolling historical ex-post ERP (calculated as a 1-year historical arithmetic average).

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[347] Ofwat (2015) Future water and sewerage charges 2010-15: Final determinations, p138.
[348] Oxera (2025) PR24 Cost of equity estimation, p9, section 2.2.2.
[349] Ofwat (2015) Future water and sewerage charges 2010-15: Final determinations, p128.
[350] Ofwat (2014) Final price control determination notice: policy chapter A7 – risk and reward, p34.

Figure 7.6: Previous regulatory implied ERP and rolling historical ex-post ERP
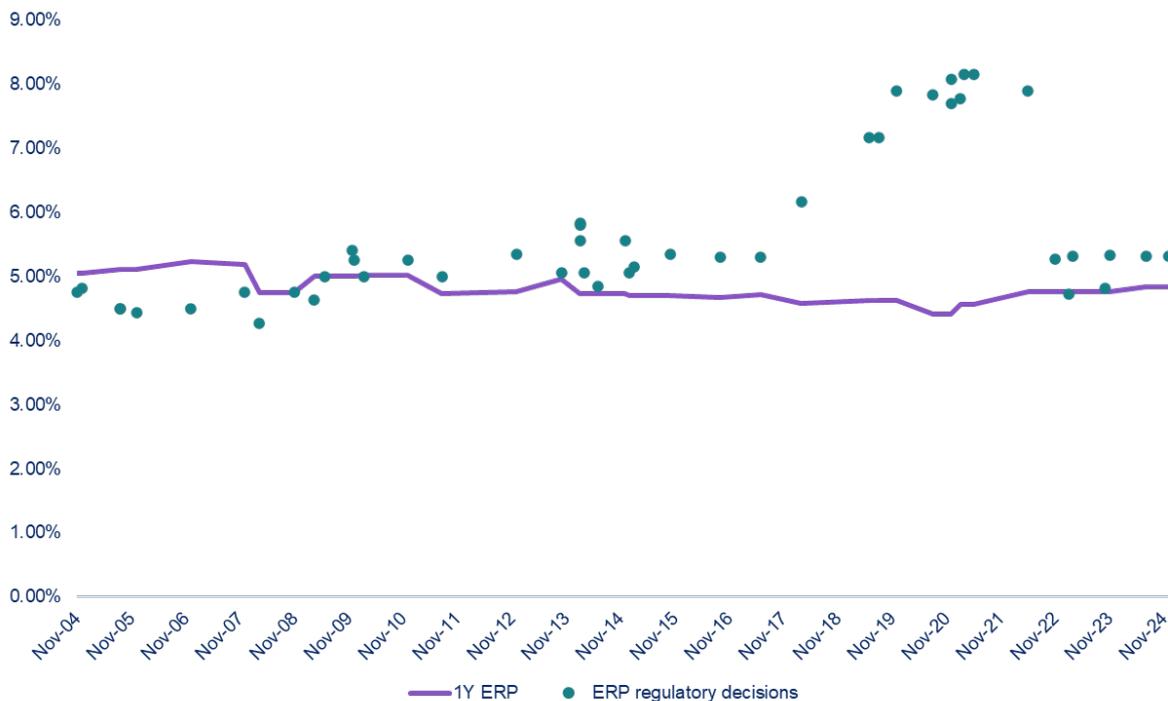
Source: CMA analysis of DMS and UKRN data

7.406 Figure 7.6 above shows that regulatory ERP decisions have typically been just above the historical ex-post 1-year arithmetic average ERP in the last 15 years (noting that ERP decisions were significantly above this during periods of negative interest rates). Prior to the GFC, regulatory ERP decisions were below the historical ex-post 1-year arithmetic average ERP, but only slightly.

7.407 While there are measurement issues with historical ex-post ERP, which we come to next, an ERP between 4.3 and 4.6% sits below where the historical ERP is now and has been for the past 20 years.

7.408 Even recognising that the actual realised ERP is far from stable, most asset pricing models which form the foundation of corporate finance theory and practice are framed in terms of premia to the return on a risk-free asset.[351] It also accords with the intuition that investors are likely to consider expected risk premia from their investments relative to each other and relative to the market.[352] Therefore, we conclude that the level of ERP in a regulatory cost of capital decision is relevant in that context.

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[351] For example, see Brealey, Myers, Allen, Edmans, Principles of Corporate Finance, 14th edition, chapters 8–9.
[352] In response to our Approach and prioritisation document, investors in South East Water submitted that 'As investors, we regulatory use a number of tools, including the CAPM model, in determining where to invest. However, ultimately, we would take a total view on associated risk and expected return and how that compares to international alternatives'. Investors in South East Water (2025), Response to CMA's approach and prioritisation document, p2.

7.409 We therefore conclude that it is useful to consider ERP evidence to inform our decision on the TMR range. We next consider:

(a) The methodological considerations for estimating the ERP.

(b) Regulatory consistency and the in-principle use of ERP evidence.

Methodological considerations for estimating the ERP

7.410 The approaches typically used to estimate the ERP are quite similar to the approaches used to estimate the TMR and can also be broadly split into approaches which largely rely on historical evidence and approaches which rely on forward-looking models or survey-based estimates.

7.411 Being mindful of the earlier principles we set out and our desire for a more 'streamlined' approach to estimating the allowed return. We therefore only consider relatively simple and transparent ERP estimates derived from long-run historical data, as a way to complement the TMR evidence presented earlier.

7.412 We start by constructing an ERP index using DMS UK nominal Government Total Return index and the DMS UK nominal equity Total Return index, consistent with the approach we took in the CMA PR24 PD. We apply the same methodology as we used to estimate the historical ex-post TMR (set out above) estimating the simple 1-year arithmetic average of the ERP and using the composite CED/CPIH series to deflate nominal returns to CPIH real. This methodology gives an implied ERP of 4.8% (CPIH-real).

7.413 We agree with Ofwat's submission that the TMR is empirically more stable than the ERP. However, we do not view this as a sufficient reason to disregard ERP evidence altogether. Although the ERP can be highly variable year-on-year, the long-run historical average is a useful reference point. As shown in Figure 7.6 above, the historical ex-post ERP estimated from the DMS dataset is broadly stable. In addition, we note the authors of the DMS Yearbook provide their view of the forward-looking ERP (considering historical trends as well as adjusting for non-repeatable factors). That view has been broadly stable over the last 20 years.[353]

7.414 We recognise the arguments put forward by the Disputing Companies, Ofwat and their advisers about the greater uncertainty around the appropriate methodology to estimate the ERP, compared to the TMR, we do not think it is in itself a reason to not give any weight to ERP evidence.

7.415 We agree with the Disputing Companies that the risk-free rate used in our ERP estimation may be overstated as it reflects the realised return on government

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[353] Dimson, Marsh and Staunton (2025) Global Investment Returns Yearbook 2025, p94. Dimson, Marsh and Staunton (2002) Triumph of the Optimists, p194.

bonds and therefore includes both inflation and interest rate risk on an annual investment horizon. However, we note that there is not a clear alternative data series to use. The data series used to estimate our RFR in the CAPM (20-year ILG yields) is not available for the full data period back to 1900. We consider the DMS data, which has been used in previous regulatory decisions and is widely available, is a reasonable proxy for the RFR to be used within our ERP calculations.

7.416   We do not agree with Frontier's submission that the choice of inflation series, and whether the ERP is estimated in real or nominal terms, should not have any impact on the ERP. The 5.3% ERP figure referenced by Frontier is the nominal ERP from the DMS yearbook. However, we are interested in the CPIH-real ERP. Given the compounding effects of inflation and the averaging of over the 125 years of historical data, it is not the case that the nominal ERP will be equal to the CPIH-real ERP.

7.417   We also note South East's suggestion to add our ERP estimate of 4.8% to the 20-year nominal gilt yield, rather than the 20-year ILG, to capture the potential inconsistency with the bond data series used to estimate the ERP. We do not agree that this would be a better approach, as it would embed current expectations of inflation risk premia into our TMR estimate.

7.418   Finally, we do not place weight on evidence of current valuations (as suggested by Ofwat and CCW). We do not consider the current valuations provide useful evidence in predicting the forward-looking ERP, given the longer investment horizons we are considering.

7.419   As the historical ex-post ERP is somewhat above the level implied by the TMR methodologies discussed earlier, combining this ERP estimate of 4.8% with our RFR of 2.4% implies a TMR of 7.2%.

Regulatory consistency and in-principle use of the ERP

7.420   Having concluded on our methodology for estimating the ERP, we next consider the issues regarding regulatory consistency and the in-principle use of the ERP.

7.421   We consider two broad themes:

(a)   regulatory consistency and one-way bet; and

(b)   transparency and aiming up.

Regulatory consistency and one-way bet

7.422   In principle, if investors have a relatively long-term investment horizon, a 'through the cycle approach' to estimating the TMR should not systematically over-reward

or under-reward investors in different interest rate cycles. However, the regulatory application of the 'through the cycle' approach to estimating the TMR has varied over time. We note that, until the last couple of years, interest rates have been consistently falling in the period since the original MMW 2003 paper was written and the TMR used in regulatory decisions has also fallen (due to changes in data used and methodologies considered).

7.423 Assessing whether investors have been over-rewarded historically is inherently challenging, and ultimately, almost impossible as the true cost of capital is not observable.

7.424 This is the first time the CMA is assessing how to approach estimating the TMR in a redetermination in the context of rising interest rates, and when investment requirements in water (as well as other infrastructure), have increased dramatically. Given the step change in investment requirements there is a need to consider the perspective of new investors coming into the sector, not just whether existing investors are 'winning' or 'losing' due to the implementation of the 'through the cycle' approach to TMR in this price control.

7.425 We note that the RFR has moved significantly since Ofwat's PR24 FD in December 2024 and even more so since the UKRN 2023 guidance was developed. We consider that there is an important balance to be struck between regulatory consistency and taking account of the wider macroeconomic context.

7.426 The use of ERP evidence in the context of UK regulatory decisions is not novel. For example, the CC 2014 Northern Ireland Electricity Limited price determination[354] and the CMA's energy market investigation[355] included analysis of historical ex-post ERP evidence. In addition, Ofwat's PR09 decision estimated a long-term ERP from the DMS dataset.[356]

7.427 Our proposed approach to giving some weight to and estimating the ERP is a pragmatic solution for this redetermination and is in no way binding on future regulatory decisions. However, we note that UKRN plans to conduct a review of its 2023 cost of capital guidance next year.[357] In addition, the IWC recommended that the UK government consider a standardised approach to setting the WACC methodology across all UK regulated sectors[358] and Defra stated that it would support cross-government work to consider wider alignment of methodologies and processes across economic regulators.[359] Against the backdrop of needing to attract significant investment into UK infrastructure, in our view, a targeted review

[354] CC (2014) Northern Ireland Electricity Limited price determination, pp13-25.
[355] CMA (2016) Energy Market Investigation, Appendix 9.12: Cost of capital, pp9-10.
[356] Ofwat (2009) PR09 final determinations, p128.
[357] UKRN (2025) Annual cost of capital report 2025, p4.
[358] IWC Final Report, p221.
[359] Defra White Paper, p29.

of the existing TMR methodology may ultimately benefit customers, without undermining the ambition for greater consistency in cost of capital methodologies.

7.428   We note Ofwat's and CCW's observations that a mechanistic application of our methodology in this redetermination would have implied a significantly lower allowed return at PR19. However, we would caution against such retrospective application of our approach. We do not agree with the conclusion that our approach results in a one-way bet with customers paying more in higher interest rate periods with no benefit when interest rates are lower.

7.429   Finally, in the context of this redetermination, the TMR implied by our ERP analysis is 7.2% CPIH-real. This is below the upper end of the CMA's PR19 TMR range of 7.5% CPIH-real. The resulting values produced by our approach cannot be described as a radical departure from the past.

Transparency and aiming up

7.430   We do not agree with Ofwat's suggestion to revert to a 'through the cycle' approach to estimating TMR and instead make adjustments when we select a point estimate for the allowed return on equity.

7.431   There are two distinct steps in our allowed return on equity analysis. The first is to consider the data and evidence available for each CAPM parameter to calibrate an appropriate overall range for the allowed return on equity. The second is to make a judgement in the round, considering cross-check evidence and other factors to select a point estimate within the CAPM range. When deciding to place weight on ERP evidence to inform our TMR range, this is part of the first step. We view this as a related, but distinct, exercise to the selection of a point estimate (which we discuss in more detail below).

7.432   Ofwat argued that making adjustments when selecting the point estimate would be more transparent. However, there is a solid basis for our ERP calculations which we see as more robust than the judgement involved in selecting a point estimate. We use the DMS data, which is widely available and a simple calculation methodology, so estimates can be replicated and understood.

Conclusions

7.433   Considering all the evidence and arguments in the round, we conclude that it is appropriate to place some weight on historical ex post ERP estimates, as a way to complement our historical ex-post and ex-ante TMR estimates. We view our approach as a way to recognise that a stable TMR does not necessarily imply the values used by regulators should be fixed through time, especially when interest rates move significantly between regulatory periods. As with the TMR, there are numerous approaches to estimate the ERP: the historical ex-post method is just

one of them, and even with the historical ex-post method, there is more than one way to estimate the ERP. However, we think that using the 1-year arithmetic average of historical ERP to inform the top end of our TMR range as a way to ensure a reasonable calibration of our TMR range is a practical and robust solution in the context of our redetermination.

7.434   Our estimate for the TMR taking into account ERP evidence is 7.2%, reflecting the historical ex-post ERP of 4.8% plus an RFR of 2.4%. We set out below how this is incorporated in our overall TMR range.

Overall TMR range

7.435   In our final TMR range, we retain our provisional approach of placing weight on:

(a)   historical ex-post simple 1-year arithmetic average of 6.9%;

(b)   historical ex-ante estimates of 6.7–6.8%, placing weight on both Fama French and DMS decompositional methodologies; and

(c)   ERP evidence in addition to TMR evidence. We use the historical ex-post methodology to estimate the ERP of 4.8%. We add this to our RFR estimate of 2.4% to give a TMR estimate of 7.2%.

7.436   Putting the various estimates together produces a TMR range of 6.7% to 7.2% with a mid-point of 6.95%. We consider this range to be broadly unbiased – ie we do not view either end of the range as more likely – given that the mid-point of our range is broadly consistent with the historical ex-post TMR evidence, which all stakeholders agree is a robust and reliable TMR methodology.

Beta

Summary

7.437   We set an unlevered beta range of 0.276 to 0.314. [360] We estimate 3-year betas for Severn Trent, United Utilities and Pennon to inform the top end of our range. We estimate a 10-year portfolio beta for Severn Trent, United Utilities and Pennon, with Pennon added to the portfolio from 1 October 2021, to estimate the bottom end. This compares to an unlevered beta range of 0.28 to 0.34 in the CMA PR24 PD.

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[360] Compared to the CMA PR24 PD, we have decided to round the unlevered beta range to 3 decimal points in the final determination, to increase the precision of our beta range.

Introduction

7.438 Beta within the CAPM framework reflects an asset's (or a portfolio of assets') exposure to systematic (or common) risks relative to the broader market.

7.439 A commonly referenced systematic risk is the performance of the overall economy. Systematic risks are distinct from idiosyncratic risks, which may impact only a small number of assets, or may simultaneously impact different assets positively and negatively. The models we use to estimate the cost of equity assume that idiosyncratic risks are diversified away, and so we only concern ourselves with exposure to systematic risks.

7.440 The beta faced by investors in a company's assets is often called the asset beta. However, investors normally invest in securities (which are able to call on returns earned on those assets), rather than directly investing in the assets themselves. Where this is the case, the asset beta (βa) can then be split into equity beta (βe), the exposure of shareholders to systematic risk, and debt beta (βd), the exposure of bondholders to systematic risk. In estimating the asset beta, debt and equity betas are weighted by the proportion of debt (g) and equity (1 − g) within the capital structure, as shown below.

$$\beta a = g * \beta d + (1 - g) * \beta e$$

7.441 This is the Harris-Pringle formula, where βa is the asset beta, βe is the equity beta, βd is the debt beta, and g is gearing, as defined by net debt/(net debt + equity).

7.442 Raw equity betas[361] are estimated through regression analysis of share price returns for listed comparators on total market returns, typically using a range of estimation periods (eg 2-year, 5-year, 10-year) and a range of returns data (eg daily, weekly or monthly). There is a trade-off between using more recent data, which may be more relevant to market expectations of future risk, and longer estimation windows which improve statistical significance and may be less influenced by one-off events.

7.443 Estimated raw equity betas are typically unlevered through the Harris-Pringle formula to allow for more precise comparisons of risk across firms with different levels of gearing. An asset beta is therefore a measure of operating risk not affected by the financial capital structure choices of each comparator.

7.444 Some regulators, including Ofwat, isolate the impact of the debt beta assumption on de-levering, by making a distinction between an asset beta (as defined in the equation above) and an 'unlevered beta' (which is based on the same definition as the asset beta but assumes a zero-debt beta).

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[361] The raw equity beta is the direct econometric estimate of beta derived from market data.

7.445   To estimate the notional equity beta, the asset beta is re-levered using the regulator's assumptions for the notional gearing and debt beta for the relevant notional company.

7.446   We begin this section by providing the overall context to the beta analysis, by summarising Ofwat's approach to estimating the beta at PR24 FD and providing an overview of the estimates provided by the Disputing Companies, including any overarching comments on the overall level of the beta we used in the CMA PR24 PD. We then turn to the discussion of the key methodology debates raised by the Parties, including in response to the CMA PR24 PD, and our assessment and decision on each.

Ofwat's PR24 FD approach

7.447   Ofwat's approach to estimating the beta in the PR24 FD was based on:[362]

(a)   5- and 10-year estimation windows. Ofwat stated that shorter-term betas are volatile and were liable to be misleading estimates of future beta measurements, while longer window betas capture more data, which tended to increase the statistical precision of estimates; [363]

(b)   spot daily sampling frequencies. Ofwat noted that this gave greater precision of estimates and lack of 'reference day' effect observed with lower-frequency data;[364]

(c)   equal weights placed on Severn Trent and United Utilities with no weight on Pennon; and

(d)   application of the Harris-Pringle formula[365] and a debt beta range of 0.05 to 0.15.

7.448   Ofwat set an unlevered beta range of 0.268 to 0.295 with a midpoint of 0.282.[366] It used United Utilities 5-year daily spot beta for the lower end of the range and Severn Trent 10-year daily spot beta for the upper end of the range.[367]

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[362] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p38.
[363] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, pp40 and 42.
[364] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p38.
[365] The Harris-Pringle formula for de- and re-levering beta is: Asset beta = raw equity beta x (1-gearing) + debt beta x gearing. Re-levered equity beta = (asset beta – (debt beta x gearing)) / (1- gearing).
[366] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p58.
[367] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, pp57–58.

Overview of the parties' submissions

Disputing Companies

7.449   In the statements of cases, all Disputing Companies estimated betas using daily sample frequencies and spot betas.[368]

7.450   Oxera, Anglian's advisers, argued for an unlevered beta range of 0.31 to 0.34,[369] which sits above Ofwat's FD estimate.[370] It estimated the lower end of the range based on the average betas of Severn Trent, United Utilities and Pennon 2-, 5- and 10-year betas and the upper end based on the Severn Trent, United Utilities and Pennon 2-year betas.[371] To address Ofwat's concern of the 5-year beta for Pennon not being a 'pure play'[372] beta it also estimated betas with a 3-year window to remove the impact of the sale of Viridor on the business risk and the cash balances of Pennon.[373] Oxera noted that the 3-year window beta estimates increase relative to the 5-year window ones, suggesting that there was a systematic reassessment of the level of risk faced by the industry.[374] KPMG, South East and Southern's advisers, argued for an unlevered beta range of 0.32 to 0.36.[375] This was based on 10-year spot daily betas.[376] KPMG submitted that 2-year betas are inherently more volatile and statistically less robust than longer-term estimates but could capture recent shifts in the company's risk profile, which will not be reflected in longer-term estimates.[377]

7.451   KPMG initially derived an unlevered beta range of 0.29 to 0.36, with the lower end informed by the unadjusted 10-year beta for Severn Trent and United Utilities, and the upper bound by the adjusted 10-year beta for Pennon, adjusted for the full period of Covid restrictions.[378] Kairos, Northumbrian and Wessex's advisers, estimated an unlevered beta range of 0.319 to 0.337 over an approximately 10-year period, adjusted for the effects of the COVID-19 restrictions and the Viridor sale.[379] Kairos based the lower bound on the value weighted portfolio of Severn Trent and United Utilities accounting for the COVID-19 period of restrictions and Viridor's spinoff and the upper bound on the value weighted portfolio of Severn

[368] Kairos (2025) Setting the Allowed Return on Equity for PR24, p4; Oxera (2025) PR24 Cost of equity estimation, p27; KPMG (2025) Estimating the Cost of Capital for PR24, p56.
[369] Oxera submitted a re-levered equity beta range of 0.69 to 0.76 which is equivalent to an unlevered beta range of 0.31 to 0.34.
[370] Oxera (2025) PR24 Cost of equity estimation, p28.
[371] Oxera (2025) PR24 Cost of equity estimation, pp27–28.
[372] By 'pure play' in this context we mean only, or mostly, carrying out Appointee water activities and not non-regulated or other activities.
[373] Oxera (2025) PR24 Cost of equity estimation, p27.
[374] Oxera (2025) PR24 Cost of equity estimation, p27.
[375] KPMG (2025) Estimating the Cost of Capital for PR24, p78.
[376] KPMG (2025) Estimating the Cost of Capital for PR24, p56, paragraph 6.0.3.
[377] KPMG (2025) Estimating the Cost of Capital for PR24, p77, paragraphs 6.4.44–6.4.46.
[378] KPMG (2025) Estimating the Cost of Capital for PR24, p61, paragraph 6.2.13.
[379] Kairos (2025) Setting the Allowed Return on Equity for PR24, p4.

Trent, United Utilities and Pennon accounting for the COVID-19 period of restrictions and Viridor's spinoff.[380]

7.452   Kairos submitted that there is a trade-off between relevance and reliability. Longer samples generate more reliable estimates that are less heavily influenced by atypical and transient events which may not be representative of the ensuing control period than shorter samples, but may be less relevant to market expectations for future risk.[381] However, Kairos relied on the existence of a structural break at the start of PR14, as found by Gregory, Harris and Tharyan in their report during the CMA's PR19 redeterminations and submitted that this supported the sole use of an approximately 10-year time window.[382] For this reason, Northumbrian submitted that the primary approach should be a 10-year window at daily sampling frequencies.[383]

7.453   Wessex Water however submitted that Ofwat's mistaken reduction in beta was also due to placing no weight on short-term beta estimates, which reflect the change in the investment environment.[384]

7.454   In responses to the CMA PR24 PD, Anglian, South East, Southern and Northumbrian submitted that the CMA beta still downplays the risk in the sector.[385] KPMG, on behalf of South East and Southern, submitted that they did not agree with the lower bound of the CMA's PD beta range[386] and submitted an updated overall range of 0.3 to 0.34.[387] KPMG submitted that a lower bound of the beta range below CMA's PR19 beta point estimate appears implausible and is inconsistent with the PD's wider recognition that risks in the sector have fundamentally changed.[388] South East submitted that an unlevered beta of 0.28 compares to the CMA's PR19 unlevered beta of 0.29 and that given the fundamental shift in the sector's risk environment, a reduction in the lower bound appears counterintuitive.[389]

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[380] Kairos (2025) Setting the Allowed Return on Equity for PR24, p56, Table 13 and p57, paragraph 194.
[381] Kairos (2025) Setting the Allowed Return on Equity for PR24, p39, paragraph 124.
[382] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp59–60, paragraph 202.
[383] Northumbrian SoC, pp154–156, figure 51.
[384] Wessex SoC, pp89–90, paragraph 10.12 (c).
[385] Anglian (2025) Response to CMA PR24 PD, paragraph 513; South East (2025) Response to CMA PR24 PD, paragraph 6.25; Southern (2025) Response to CMA PR24 PD, paragraph 7.71; Northumbrian (2025) Response to CMA PR24 PD, paragraph 324.
[386] South East (2025) Response to CMA PR24 PD, paragraph 6.25; Southern (2025) Response to CMA PR24 PD, 1.103.
[387] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.4.1; Southern (2025) Response to CMA PR24 PD, paragraph 1.104.
[388] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraphs 1.1.13 and 8.3.6; South East (2025) Response to CMA PR24 PD, paragraph 6.25; Southern (2025) Response to CMA PR24 PD, paragraph 1.103
[389] South East (2025) Response to CMA PR24 PD, paragraph 6.25; KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.3.6

7.455   In its response to the CMA PR24 PD, Northumbrian submitted that it is broadly comfortable with the CMA PR24 PD midpoint of 0.31, but remains of the view that 0.33 is a more accurate estimate.[390]

Third parties

7.456   MCC Economics, on behalf of CCW, submitted that it broadly agreed with Ofwat's approach to estimating the beta, however, it noted that Ofwat's beta looked high when considered against a range of different estimation windows and frequencies, and that an appropriate approach would have been to choose an unlevered beta of 0.25. MCC Economics also submitted that Ofwat could have considered the Generalised Autoregressive Conditional Heteroskedasticity (GARCH) model, as it stated that this could lead to more accurate estimates of beta. MCC's beta point estimate was based on the 5-year United Utilities GARCH unlevered beta.[391]

7.457   In its response to the CMA PR24 PD, MCC Economics and Citizens Advice submitted that through price controls, the CMA's approach to estimating the beta has been inconsistent and undermines stability in the regulatory framework.[392]

7.458   Specifically on the issue of using GARCH (raised by MCC Economics) versus ordinary least squares (**OLS**), we consider that OLS is suitable in most cases. On MCC's own analysis, while the GARCH betas are lower than OLS, the differences are not large, and we did not receive evidence that using GARCH would statistically improve our estimates.[393] Therefore all of our beta estimates presented in this section are estimated using OLS.

7.459   We now turn to the methodology issues which the parties have raised in estimating beta. These are:

(a)   the inclusion of Pennon;

(b)   the impact of COVID-19;

(c)   the impact of increasing capital intensity; and

(d)   linked to points (a) and (c) above, the use of long-term versus short-term betas.

7.460   We consider each of these issues in turn. We also cover the debt beta and submissions on the low beta anomaly before setting out our conclusions on beta.

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[390] Northumbrian (2025) Response to CMA PR24 PD, paragraphs 323–324.
[391] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp21–22.
[392] CCW (2025) Response to CMA PR24 PD (MCC review appendix), slide 11; Citizens Advice (2025) Response to CMA PR24 PD, paragraph 22.
[393] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp21–22.

Inclusion of Pennon

7.461   As set out in paragraph 7.442, raw equity betas are estimated using comparable listed companies. When estimating the beta for a price control decision, these listed companies should form suitable comparators for the regulated activities, and should either individually or in aggregate have similar systematic risk exposure to the notional company. In the UK water sector there are three listed water companies. These are United Utilities, Severn Trent (which also owns Hafren Dyfrdwy) and Pennon Group (which owns South West Water, Bristol Water, Bournemouth Water and Sutton and East Surrey Water).

7.462   It is agreed between Ofwat and the Disputing Companies that Severn Trent and United Utilities should be included in beta estimations. MCC Economics, CCW's advisers, also submitted that it agreed with Ofwat's comparators: United Utilities and Severn Trent.[394] We also include Severn Trent and United Utilities in our beta analysis. This section considers the arguments for and against the inclusion of Pennon.

Ofwat PR24 FD approach

7.463   Ofwat did not include Pennon in its comparator set due to its concerns over the potential distortive impact of its previously owned waste management business, Viridor, on betas.[395] Ofwat based its beta range on 5- and 10-year estimation windows. Ofwat concluded there was not sufficient 'clean' data for Pennon as it had only been a 'pure play' company since Viridor's sale in July 2020.[396] Ofwat also stated that Pennon's company specific factors may lead to uncertainty around its long-term financial structure.[397] Ofwat stated that Pennon's acquisition of Bristol Water in 2021 and highly-geared Sutton and East Surrey Water in January 2024, the sale of Viridor in 2020 and the uncertainty around future equity financing plans were factors which may have created discontinuity in Pennon's gearing.[398]

7.464   Mason, Robertson and Wright, Ofwat's advisers, recognised the potential value of including additional data in the estimation of beta as there are so few publicly listed UK water companies, but had concerns about the differences between Pennon and Severn Trent and United Utilities.[399] They stated that the instability of

[394] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p20, paragraph 55.
[395] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p38. Ofwat (2025), paragraph 4.42.
[396] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p5.
[397] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p54.
[398] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p54 and Ofwat (2025) Response to common issues on risk and return, p107.
[399] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p9, paragraph 2.12.

the Pennon beta can be linked to changes in gearing and composition of the assets.[400]

Parties' submissions

Disputing Companies

7.465   All Disputing Companies included Pennon in their comparator set.

7.466   The Disputing Companies submitted that Pennon has been a 'pure play' water company since it sold its waste management business, Viridor, in 2020. The Disputing Companies submitted that incorporating Pennon's data is crucial as it would improve the beta estimation.[401]

7.467   Anglian submitted that it was possible to either rely on beta estimation windows shorter than 5 years or to adjust for the alleged gearing distortions.[402]

7.468   Southern submitted the following.

(a)   The acquisition of Sutton and East Surrey Water had a negligible impact on Pennon's gearing and that Pennon had recently closed its equity financing gap with its recent £490 million right issue.[403]

(b)   Furthermore, the enforcement action[404] did not have a statistically significant impact on Pennon's beta and that the announcement of enforcement action did not have an impact on the differential between Pennon and Severn Trent/United Utilities betas. Southern also noted that Ofwat had recently opened enforcement cases[405] against Severn Trent and United Utilities.[406]

(c)   Pennon's retail activities contributed less than 2% of its operating profit, while Severn Trent's contributed around 10% of its operating profit, suggesting that Pennon is more representative of a 'pure play' water company than the other two comparators.[407]

7.469   The Disputing Companies also investigated trends in betas with different estimation windows post Viridor sale. Oxera compared the 2-year asset beta

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[400] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p10, paragraph 2.14.
[401] KPMG (2025) Estimating the Cost of Capital for PR24, p11, paragraph 2.5.3, Northumbrian SoC, pp151–p152, paragraph 583, Wessex SoC, pp89–90, paragraph 10.12 (c), South East SoC, p79, paragraph 6.17. Anglian, paragraph 557, Northumbrian, paragraph 324, South East, paragraph 6.24, Southern, paragraph 7.68, KPMG, paragraph 8.0.1
[402] Anglian SoC, p196, paragraph 749(ii).
[403] Southern SoC, p445, paragraph 216.
[404] Ofwat proposes £24 million enforcement package on South West Water for failures in managing its wastewater treatment works and network - Ofwat (accessed August 2025).
[405] Ofwat announces enforcement cases against four more companies in wastewater treatment investigation - Ofwat (accessed August 2025).
[406] Southern SoC, p445, paragraph 216.
[407] Southern SoC, p446, paragraph 218.

movements of Severn Trent, United Utilities and Pennon. Oxera stated that, despite the sale of its Viridor waste management business, Pennon's beta has trended upward, suggesting that the market did not consider Pennon to be riskier relative to Severn Trent and United Utilities before the divestment. Oxera added that after the divestment, Pennon's beta had been persistently higher than Severn Trent's and United Utilities' and as such, given a lack of full convergence of Pennon with the other two listed companies post the divestment, Oxera considered the inclusion of Pennon data from before the divestment to be appropriate.[408] KPMG compared Pennon with Severn Trent and United Utilities and indicated that there had been a trend of divergence between 10-year betas since around 2019 and that the differential had not notably reduced since the sale of Viridor.[409]

7.470　KPMG and Kairos also conducted structural break analysis to investigate Viridor's impact on Pennon's betas and included a Viridor dummy variable representing the period of time following the disposal of Viridor on 8 July 2020.[410] KPMG and Kairos found the impact of the Viridor disposal did not have a statistically significant effect on Pennon's beta.[411] In their joint reply to Ofwat's response, the Disputing Companies agreed that gearing at the sale completion was not reflective of Pennon's long-term capital structure. However, Kairos' analysis found no structural break based on the date of formal close of the sale and concluded that Pennon should be included in the comparator set.[412]

7.471　In their responses to the CMA PR24 PD, Anglian, South East, Southern and Northumbrian welcomed the CMA's inclusion of Pennon in the comparator set but submitted that the PD beta range was still understating risk, by not including Pennon at the lower end of the range.[413] The Disputing Companies proposed different options to address this:

(a)　KPMG proposed to adjust the lower-bound estimate, based on 10-year Severn Trent/United Utilities betas, by the incremental beta of 0.02 observed when Pennon is included alongside Severn Trent and United Utilities in the 3-year estimate;[414]

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[408] Oxera (2025) PR24 Cost of equity estimation, p25.
[409] Anglian SoC, p197, paragraph 751.
[410] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraphs 155–156, and KPMG (2025) Estimating the Cost of Capital for PR24, p65, footnote 130.
[411] KPMG (2025) Estimating the Cost of Capital for PR24, p65, paragraph 6.3.19 and Kairos (2025) Setting the Allowed Return on Equity for PR24, p47, paragraph 158.
[412] Disputing Companies (2025) Joint reply to Ofwat's responses, p18, paragraph 74.
[413] Anglian (2025) Response to CMA PR24 PD, paragraphs 66 and 557–558, Northumbrian (2025) Response to CMA PR24 PD, paragraphs 329-330, South East (2025) Response to CMA PR24 PD, paragraphs 6.24–6.26, Southern (2025) Response to CMA PR24 PD, paragraphs 7.71–7.72.
[414] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.1.9.

(b)   KPMG submitted that alternatively, additional weight could be assigned to Pennon at the upper bound;[415] and

(c)   Northumbrian submitted a portfolio approach to include Pennon to the lower bound, whereby an investor holds pure-play water stocks over 10-years, with Pennon being introduced once it is considered 'clean' of Viridor effects. [416]

Ofwat

7.472   In its response to the Disputing Companies' statements of case, Ofwat noted that CEPA found that minor adjustments to the specifications of the Viridor dummy variable for the structural break analysis resulted in very different results.[417] For example, Ofwat noted that adapting KPMG's analysis and applying the Viridor dummy start date on the date of the announcement rather than the financial close date lead to a statistically significant fall in betas after the disposal of Viridor.[418]

7.473   Furthermore, Ofwat stated that additional reasons may drive higher beta for Pennon, compared to Severn Trent and United Utilities: about 25% of Pennon's revenues were attributable to non-price control activities, equity analysts noted a lack of clear equity financing plan and Pennon's exposure to environmental fines was likely larger than for the other two listed companies.[419]

7.474   In its response to the CMA PR24 PD, Ofwat submitted that it agreed that Pennon currently satisfies the definition of a 'pure play' water company and did not object to the principle of including its 'clean' data.[420] Ofwat noted the very high raw betas estimated by the CMA in the PD.[421] It submitted that it considers the instability of its gearing and net debt over the past 3 years makes Pennon a less reliable comparator than the other two listed comparators.[422]

7.475   Ofwat submitted a different approach to include Pennon. Ofwat calculated the difference between the 3-year daily spot Severn Trent/United Utilities/Pennon unlevered beta and the equivalent for Severn Trent/United Utilities, resulting in 0.02 and then applied this 'wedge' to the 10-year estimate for Severn Trent/United Utilities.[423] Ofwat submitted an unlevered beta range of 0.27-0.29.[424]

[415] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.1.9.
[416] Northumbrian (2025) Response to CMA PR24 PD, paragraph 329.
[417] Ofwat (2025) Response to common issues on risk and return, p116, paragraph 5.110.
[418] Ofwat (2025) Response to common issues on risk and return, p116, paragraph 5.110.
[419] Ofwat (2025) Response to common issues on risk and return, p117, paragraph 5.112.
[420] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.42.
[421] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.42.
[422] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.42.
[423] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.41.
[424] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.41.

Third Parties

7.476   In its response to the CMA PR24 PD, Citizens Advice submitted that the CMA did not provide evidence that the additional information value provided by using Pennon as a comparator outweighs any drawbacks of using shorter-term betas.[425]

7.477   Citizens Advice requested that the CMA provided historical raw equity betas for Pennon and the other comparators to assess Pennon's inclusion.[426]

7.478   In its response to the CMA PR24 PD, United Utilities submitted they welcome the inclusion of Pennon but noted that it is limited to the upper bound.[427] In its response to the CMA PR24 PD, Yorkshire Water endorsed the inclusion of Pennon data, ensuring a more representative and robust analysis.[428]

Our assessment and decision

7.479   Ofwat did not include Pennon in its beta comparator set in Ofwat's PR24 FD, whereas all Disputing Companies and their advisers did. There are also differences in view regarding how much weight to give to Pennon, if it is to be included in the beta comparator set. We set out below our assessment of the inclusion of Pennon in our beta estimates.

7.480   We consider that there are three key issues which may affect the suitability of Pennon as a comparator. These are: business mix, capital structure, Pennon's high raw equity betas and comparability to the notional company.

7.481   Regarding **business mix**, we note that Pennon is a FTSE 250 listed company which owns South West Water, Bournemouth Water, Bristol Water and Sutton and East Surrey Water. Pennon acquired South West Water in 1989, Bournemouth Water in April 2015, and Bristol Water in June 2021, which merged with South West Water, Pennon's largest business, in February 2023. Pennon later acquired Sutton and East Surrey Water in January 2024.[429] Pennon previously owned Viridor, a waste management business which Pennon sold in July 2020.

7.482   Ofwat also submitted that Pennon had a higher share of non-regulated revenues than Severn Trent and United Utilities and therefore was not sufficiently pure play. While we agree than Pennon has a non-trivial share of non-regulated activities on a revenue basis (around 30%), profits generated by non-regulated activities are

[425] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 23.
[426] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 26.
[427] United Utilities (2025) Response to CMA PR24 PD, p6.
[428] Yorkshire Water (2025) Response to CMA PR24 PD, p2.
[429] Pennon (2025) About us (accessed August 2025).

negligible.[430] We do not view this as a sufficiently good reason to exclude Pennon from the beta analysis post the Viridor sale.

7.483   We now consider the points relating to Pennon's **capital structure** since the Viridor sale.

7.484   Pennon has gone through several acquisitions and a sale over recent years, with subsequent impacts on its gearing levels as shown in Figure 7.7 below. After the Viridor sale, Pennon held the cash proceeds from the sale and repaid a large portion of its debt with the proceeds of the sale, and gearing levels dropped sharply in September 2021 and returned to 'normal' levels in September 2022. Before the Viridor sale, the Pennon Group borrowings not relating to South West Water totalled approximately £1.2 billion and the significant majority of the borrowings were drawn to fund the investment phase of Viridor.[431] In March 2021 Pennon repaid approximately £1.1 billion principal debt.[432] During that period Pennon's gearing differed significantly both from its long-term average, and from Severn Trent's and United Utilities' gearing. This raises the question of what gearing level to use to un-lever Pennon's equity beta. While it is typical to use average gearing over the beta estimation period as the best proxy of the market's expectations of long-term gearing, there may have been greater uncertainty around appropriate gearing during this period for Pennon.

Figure 7.7: Daily Pennon gearing
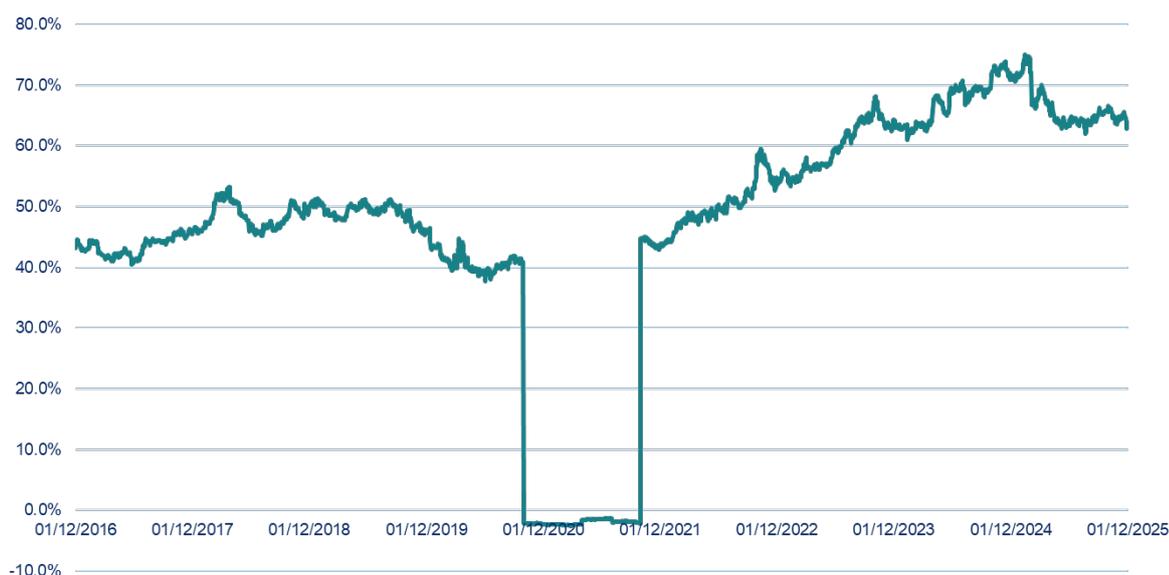
Source: LSEG Refinitiv data and CMA analysis. We estimated each figure using the daily market cap data and the latest available net debt figures (updated every six months).

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[430] Pennon (2025) Annual report 2025 p63 (accessed August 2025). Share of underlying EBITDA generated by non-regulated activities was negative (-0.8%) in 2025.
[431] Pennon Annual Report and Accounts 2021, p60.
[432] Pennon Annual Report and Accounts 2021, p60.

7.485   We conclude that the unusually high cash balances post the Viridor sale are a relevant factor to consider when estimating the beta for Pennon. However, we consider that some of the uncertainty around Pennon's long-term capital structure should have been resolved by now, especially given the completion of the equity raise process in February 2025. While the process of un-levering estimated equity betas introduces some uncertainty into beta estimates, we do not think this is a sufficiently good reason to completely exclude Pennon from the comparator set. In the CMA PR24 PD, we considered that relatively 'clean' data was available from the end of March 2022. For the final determination we have obtained more granular data by using semi-annual net debt figures for our estimations. We now consider that relatively 'clean' data to estimate a beta for Pennon is available from 1 October 2021.

7.486   Regarding the comparability of Pennon to the **notional company**, we consider that given the overall paucity of listed comparators in the sector, more data points is better than fewer. Pennon now owns a WaSC and three WoCs, together comprising around 5.0%[433] of the industry RCV. The characteristics of a notional company are somewhat subjective in any case.

7.487   Ofwat also raised arguments relating to enforcement action against Pennon which reduced its suitability as a comparator for estimating beta. We note that in July 2024, Ofwat also announced enforcement action against Severn Trent and United Utilities.[434] It is therefore not appropriate to exclude Pennon on this basis. Some parties also raised concerns about the relatively high levels of Pennon's raw equity beta compared to Severn Trent and United Utilities (as shown in the figure below).

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[433] Oxera (2025) PR24 Cost of equity estimation, p25.
[434] Ofwat proposes £24 million enforcement package on South West Water for failures in managing its wastewater treatment works and network - Ofwat (accessed August 2025).

Figure 7.8: 2-year rolling daily raw betas

7.488   Given the trends in Pennon's gearing shown earlier, it is not necessarily surprising that the equity beta has increased in recent years. Higher levels of financial risk, for a given level of operating risk, would be expected to increase the equity beta, all else equal. We do not consider the higher absolute levels of Pennon's equity beta in itself to be a good reason to exclude or downweigh Pennon in our beta estimations.

7.489   Finally, we note that all advisers have suggested Pennon can be included in estimations which rely on data before the divestment and provided slightly different reasoning to justify this.

7.490   However, as a matter of principle, we have concerns about relying on Pennon data pre-Viridor sale. Pennon was a different business before the sale and we consider it would be more robust to exclude it altogether from that period. Further, noting our concerns around cash balances we conclude that we can more reliably estimate a beta for Pennon, which is representative of a pure play water company, using data after September 2021.

7.491   This does mean that we only have reliable data for Pennon from 1 October 2021 (ie just over 4 years' worth of data to our cutoff date of 30 November 2025). However, on balance we consider that the additional information value provided by using Pennon as a comparator outweighs any drawbacks of having a more limited data set compared to Severn Trent and United Utilities. We discuss how we

incorporate Pennon's data into our estimation later in this section, once we have considered the other arguments on beta.

Impact of COVID-19

7.492　The COVID-19 pandemic resulted in the shutdown of large sections of the economy, with subsequent profound economic consequences.

7.493　Market volatility typically increases during crises but share prices of safe stocks are generally more resilient to macroeconomic shocks, as investors tend to hold or increase their holdings in such stocks rather than sell them. This may lead to a reduction in the covariance of the stock's returns with the market and therefore the equity beta. While the equity beta might be lower, periods of market volatility can therefore reveal useful information about the insurance value of such stocks.

7.494　Therefore, our starting point is that it is important not to disregard periods such as the COVID-19 pandemic from the estimation completely, but there is a question of how representative the historical betas are, estimated over typical estimation windows which include the pandemic, of forward-looking risk.

7.495　The treatment of the pandemic in beta estimation has come up in recent regulatory decisions. In the CMA PR19 Final Report, the CMA stated that the pandemic represented a systematic event which should not be excluded from the data.[435] However, the CMA recognised that this type of economic crisis was relatively rare and therefore placed less weight on the lower estimates from the dataset to December 2020 relating to the pandemic period, rather than to the dataset to February 2020 (which excluded the start of the pandemic).

7.496　In its Heathrow H7 price control decision the CAA applied a COVID-19 adjustment to the baseline beta, in the context of having no pure-play comparators and a large increase in the observed betas for the imperfect comparators it did have during the pandemic.[436] This approach was subsequently found not to be wrong by the CMA on appeal.[437]

Ofwat PR24 FD approach

7.497　Ofwat did not manually adjust its beta estimate for the impact of COVID-19. Ofwat stated that reweighting or omitting data relating to the period affected by COVID-19 was unnecessary for a robust beta estimate.[438] Ofwat stated that such approaches are reliant on subjective judgments to define periods that need

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[435] CMA (2020) Final report, paragraph 9.468.
[436] CMA (2023) Heathrow H7 Licence Modification Appeals - Final determinations, pp143–144, paragraphs 6.22–6.25.
[437] CMA (2023) Heathrow H7 Licence Modification Appeals - Final determinations, p160, paragraph 6.78.
[438] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p42.

reweighting and the weights used.[439] Furthermore, Ofwat stated that during the Heathrow H7 decisions the CMA panel agreed with its assessment on the impact of Covid stating that 'the impact of the pandemic on water betas was relatively small compared to airport groups'.[440]

7.498   Ofwat submitted that the obvious and large sensitivity of betas of airport groups to pandemic risk explained the reweighting approach taken by the CAA in its final determination for Heathrow H7.[441] Ofwat submitted such an approach for water would have been disproportionate for such an uninfluential factor.[442] Furthermore, it submitted this approach could have worsened the beta estimation accuracy as this period is relevant to water beta dynamics over 2025-30.[443]

7.499   Ofwat noted that there were other potential periods for which a case to reweigh or truncate the beta had been made and adjusting for all of them would have risked potentially mis-weighing other factors and stripping out beta data.[444] Ofwat stated the application of a long span of data was sufficient to capture a diverse range of systematic risk without being dominated by more recent periods.[445]

Parties' submissions

Disputing Companies

7.500   All Disputing Companies except Anglian adjusted for the effects of COVID-19 restrictions in their beta calculations as they raised the need to adjust for the downwards effects of the pandemic. Kairos and KPMG used slightly different methodologies, which included regressions with dummy variables and structural break analysis.

7.501   Kairos, Wessex's and Northumbrian's advisers, included the effects of COVID-19 restrictions in its beta estimates. It added a number of macroeconomic variables and dummy variables representing the periods of time during COVID-19 for which restrictions were in place to the beta regressions.[446] Kairos' restrictions periods capture dates between 16 March 2020 and 23 June 2020 and between 6 January 2021 to March 2021.[447] It found substantial differences between beta estimates that did, and did not adjust for the period of COVID-19 restrictions, and that the estimated effect of excluding COVID-19 periods was statistically significant at a

[439] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p42.
[440] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p44, citing CMA (2023) Heathrow H7 Licence Modification Appeals - Final determinations, p162, paragraph 6.83 and Figure 6.1.
[441] Ofwat (2024) draft determinations: Aligning Risk and Return – allowed Return appendix, pp45–46.
[442] Ofwat (2024) draft determinations: Aligning Risk and Return – allowed Return appendix, p46.
[443] Ofwat (2024) draft determinations: Aligning Risk and Return – allowed Return appendix, p46.
[444] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p39.
[445] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p39.
[446] Kairos (2025) Setting the Allowed Return on Equity for PR24, p43, paragraph 144.
[447] Kairos (2025) Setting the Allowed Return on Equity for PR24, p43, footnote 92.

daily frequency for all listed comparators.[448] Kairos included the betas adjusted for COVID-19 to construct its range.

7.502　KPMG, Southern's and South East's advisers, applied a structural break analysis to the 10-year beta estimation window for the Severn Trent/United Utilities composite.[449] A dummy variable was used to capture the periods affected by COVID-19 restrictions from 16 March 2020 to 19 July 2021, based on UK COVID-19 lockdown timeline.[450] This dummy variable was then included in the beta regression to identify the impact of the structural break on beta values.[451] KPMG submitted that the negative and statistically significant coefficient indicated the COVID-19 restrictions led to a significant reduction in the raw equity beta.[452] KPMG submitted that adjusting for these distortions yielded a beta range of 0.29 to 0.36.[453]

7.503　During a hearing, Professor Gregory, adviser to Wessex and Northumbrian, stated that large sectors of the economy, such as the travel and hospitality sectors, were shut down during the pandemic and their betas increased as a consequence.[454] Professor Gregory noted that the lockdowns induced a mechanical effect, as the average market beta still had to remain 1 by definition. Professor Gregory noted that if the affected sectors' betas went up other betas and therefore water sector betas had to fall.[455] Professor Gregory concluded that by not adjusting one was effectively assuming that the same response is equally likely to happen during the next ten years.[456]

7.504　Oxera, Anglian's advisers, did not manually adjust for COVID-19. However, during one of the hearings Anglian noted that Anglian adopted a 2-year beta. Anglian stated that the advantage of a 2-year beta was that it inherently included Pennon in the comparators set, excluded the COVID-19 period and reflected higher capital intensity.[457]

Ofwat

7.505　Ofwat reiterated its view that the proposed approaches sought to exclude periods of lower betas but did not apply the same criteria to potentially exclude periods of

[448] Kairos (2025) Setting the Allowed Return on Equity for PR24, p44, paragraph 147.
[449] KPMG (2025) Estimating the Cost of Capital for PR24, p59, paragraph 6.2.5.
[450] KPMG (2025) Estimating the Cost of Capital for PR24, p59, paragraph 6.2.5.
[451] KPMG (2025) Estimating the Cost of Capital for PR24, p59, paragraph 6.2.5.
[452] KPMG (2025) Estimating the Cost of Capital for PR24, p59, paragraph 6.2.6.
[453] KPMG (2025) Estimating the Cost of Capital for PR24, p61, paragraph 6.2.13.
[454] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p71, lines 18–26.
[455] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p71, lines 18–26.
[456] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p72, lines 1–6.
[457] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p87, lines 15–25

higher betas. Ofwat submitted that such approaches are reliant on subjective judgements to define periods that need reweighting and the weights to be used.[458]

7.506 Mason, Robertson and Wright, advisers to Ofwat, carried out a structural break analysis for Brexit and submitted that there are a number of potential candidates for periods of time which could be adjusted for in beta estimates and it would be very difficult to know when to stop.[459] Mason, Robertson and Wright also submitted that given the short-run instability of betas, it is relatively easy to find apparent evidence of structural instability.[460] CEPA, Ofwat's adviser, submitted that KPMG selected an unsuitable start date to define the affected period.[461] CEPA replicated KPMG's analysis and by applying a new date the impact on beta fell by two-thirds and became statistically insignificant.[462] CEPA also applied an approach similar to KPMG's to assess the impact of Brexit and found that pre-Brexit measurements were higher and that the difference was statistically significant.[463] Furthermore, it submitted that it would be a mistake to assume that periods of market volatility, 'flight to safety' conditions or low beta estimates are anomalies that are irrelevant to forward-looking assessments of beta.[464]

Disputing Companies' reply

7.507 In a joint response, the Disputing Companies submitted that the purpose of the structural break analysis was not to exclude periods of unusually 'low beta' or 'high beta' but to account for periods which are not expected to repeat with comparable frequency.[465]

7.508 The Disputing Companies also submitted that Kairos extended its analysis of structural breaks for the period of COVID-19 under the assumption that the number and timing of structural breaks are unknown, meaning structural breaks are determined using the data itself.[466] The Disputing Companies submitted that Kairos found that the only break date to commonly occur across specifications during 2020 is 17 March 2020, which was consistent with the use of a start date of 16 March 2020 for their structural break analysis.[467]

[458] Ofwat (2025) Response to common issues on risk and return, p114, paragraph 5.99
[459] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p7, paragraph 2.5.
[460] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p8, paragraph 2.8.
[461] CEPA (2025) Supplementary evidence on the cost of equity: response to statements of case, p7
[462] CEPA (2025) Supplementary evidence on the cost of equity: response to statements of case, p8
[463] CEPA (2025) Supplementary evidence on the cost of equity: response to statements of case, p8
[464] CEPA (2025) Supplementary evidence on the cost of equity: response to statements of case, p5
[465] Disputing Companies (2025) Joint reply to Ofwat's response, p14, paragraph 59.
[466] Disputing Companies (2025) Joint reply to Ofwat's response, p16, paragraph 67.
[467] Disputing Companies (2025) Joint reply to Ofwat's response, p16, paragraph 67.

7.509   In its response to the CMA PR24 PD, KPMG submitted that the COVID-19 period affects long-term beta calculations and helps explain the reduction in long-term estimates relative to the PR19 Final Determination.[468]

7.510   In its response to the CMA PR24 PD, Northumbrian submitted that the CMA's position is irreconcilable with its conclusion in H7.[469] Northumbrian also requested that the CMA explains why it still considers the dates used for the adjustments to be subjective despite all the evidence submitted.[470]

7.511   Regarding Professor Gregory's argument on the mechanical effect of COVID-19 on betas, Northumbrian noted that it does not consider that the assumption that the same effect will repeat with comparable frequency is sound.[471]

Our assessment and decision

7.512   Our starting point is that the bar for adjusting econometric beta estimates (through applying dummy variables or re-weighing) should be high. This is because historical data will capture a range of different economic conditions and events, and while the future is unlikely to be exactly like the past, predicting how likely certain risks are in the future is inherently subjective and uncertain. Periods of higher market volatility can also be useful to illustrate how stocks respond to negative shocks, which can be informative for estimating beta.

7.513   We also consider that UK water is relatively unique compared to other regulated sectors in that we have pure-play listed companies for which we can directly estimate the beta. This in our view further reinforced the need to be cautious about adjusting econometric beta estimates. This also goes back to the earlier principles we set out about maintaining consistency and reducing the number of subjective adjustments to underlying market data.

7.514   We also note that the impact of COVID-19 does not appear to be particularly material for water companies. While we observe a fall in the 2-year and 5-year unlevered betas (see Figure 7.9 and Figure 7.10) following the first lockdown (announced on 17 March 2020), and the betas then stay at lower levels until this date falls out of the estimation window, these short-term movements do not appear particularly atypical in a longer-term context.

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[468] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.3.5.
[469] Northumbrian (2025) Response to CMA PR24 PD, paragraph 327.
[470] Northumbrian (2025) Response to CMA PR24 PD, paragraph 328.
[471] Northumbrian (2025) Response to CMA PR24 PD, paragraph 327.

Figure 7.9 : 2-year rolling daily unlevered betas

Source: LSEG Refinitiv data and CMA analysis.

Figure 7.10 : 5-year rolling daily unlevered betas

Source: LSEG Refinitiv data and CMA analysis.

7.515   Taking into account structural breaks in beta estimation inevitably introduces another layer of judgement, as it requires a regulator to take a view on whether the alleged impact on the beta is something that should be adjusted for or something that is informative of forward-looking risks in the sector. On balance, given the relatively muted impact the COVID-19 pandemic has had on water company betas, we consider any explicit adjustment is more likely to introduce additional noise into the estimation rather than improve it.

7.516   To the extent that COVID-19 had a downward impact on betas, and given that we do not want to overweigh this in our analysis, we now have more than 4 years of data post the dates identified by Kairos and KPMG as having a 'distortive' effect on the beta.

7.517   We remain of the view that structural break analysis involves a degree of subjectivity. While both Kairos and KPMG broadly agree on the start date for the pandemic effect in their analysis, they used different end points. Kairos used the periods from 16 March 2020 and 23 June 2020 and between 6 January 2021 to March 2021 and KPMG used the period from 16 March 2020 to 19 July 2021.

7.518   We also note that Ofwat's advisers pointed to evidence that other structural breaks can be found, depending on how the analysis is specified. This is consistent with the conclusion in the CMA PR19 Final Report, where different parties provided conflicting evidence on the number of structural breaks in the historical data series.[472]

7.519   We note the point raised by Professor Gregory (paragraph 7.503 and 7.511) that there is a mechanical effect to estimating beta, as the average market beta has to remain 1 by definition and that the COVID-19 effect on betas will not repeat with the same frequency. However, excluding 'black swan events'[473] or periods of market volatility would arbitrarily lead to the exclusion of time periods when water company betas are low. The risk premium of regulated utilities and therefore water companies reflect that they are safe investments during periods of shock. While we can debate the frequency with which such events will occur in the future relative to the historical time series, given the scale of the impact on the water betas, we do not consider a need to explicitly adjust historical betas for this.

7.520   Some parties have raised consistency issues with the CMA approach in the H7 appeal. We note that H7 fundamentally differed from PR24 because of the lack of directly comparable listed airports, requiring greater regulatory judgement. Furthermore, H7 occurred during the COVID-19 pandemic, when significant new information relevant to airport investors was emerging during the price review

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[472] CMA (2021) PR19 Final Report, p863, paragraph 9.467.
[473] A black swan event is an extremely negative event or occurrence that is impossibly difficult to predict.

process, with the CAA needing to make a judgement on how best to incorporate this new information into its beta estimates.

7.521　With the COVID-19 pandemic and its immediate and longer-term effects on water company betas having now crystallised, we can take a different judgement on how best to reflect this information in the beta estimates in the context of this redetermination. Our preference is to make this judgement in the round, in our assessment of the overall beta range (paragraph 7.620(b)), rather than through an explicit adjustment to econometric estimates.

Impact of increasing capital intensity

7.522　The cost of capital should reflect the forward-looking risk of investing in the regulated activities, but the available evidence on risk is backward-looking. Betas are typically estimated using regression analysis of share price returns on the stock market returns, using historical data. This type of analysis implicitly assumes that risks faced by investors historically are broadly representative of forward-looking risk.

7.523　Throughout the PR24 price review process, water companies argued that the level of risk in the sector is increasing and therefore Ofwat's beta was too low and did not sufficiently reflect the increase in risk.[474] Ofwat did not explicitly adjust its econometric beta estimates for forward-looking risk in its PR24 FD.

Ofwat's PR24 FD approach

7.524　Ofwat concluded the conditions of PR24 did not necessitate a departure from the use of econometric beta estimates from listed water companies.[475] Ofwat also stated that it is rare to adjust econometric betas in proportion to capex intensity in UK regulation.[476]

7.525　Ofwat noted that adjusting econometric beta estimates carried an inherent risk of measurement error and also risked double counting the impact of forward-looking risk (as betas to some extent will reflect information about the future).[477] Furthermore, Ofwat noted that if the outturn beta turns out to be higher than expected this higher beta will be reflected in the PR29 control.[478]

7.526　Ofwat submitted it agreed with CEPA's position that the 2025-30 average of annual capex-to-RCV is a more informative measure than the 2025-30 capex as a

[474] Northumbrian SoC, p15–16, paragraphs 47–49; Wessex SoC, p89, paragraph 10.12 (c); South East SoC, pp79–80, paragraphs 6.18–6.20; Southern SoC, pp427–428, paragraph 85; Anglian SoC, p199, paragraph 759; Ofwat (2025) Response to common issues on risk and return, pp81–82 and p110, paragraph 5.84
[475] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p45.
[476] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p47.
[477] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p47.
[478] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p51.

share of closing 2024/25 RCV.[479] This is as it is used by other regulators (aiding comparability), and it is more representative of the impacts of capex intensity, reflecting that growth in the RCV generates additional cashflows in the form of higher allowed return and RCV run-off payments which can act as a buffer to absorb shocks from the capex programme.[480] Ofwat also submitted that it agreed with CEPA's assessment of previous UK regulatory decisions that, while capex-to-RCV has occasionally been a consideration in determining equity beta, its role has often been unclear, and increases have not been in proportion to the size of the ratio.[481]

7.527   Ofwat noted the forecast average annual capex-to-RCV for PR24 was slightly higher than the average over the past 15 years.[482] Ofwat stated that the link between higher capex intensity and higher undiversifiable risk was weak from a theoretical and empirical standpoint. Furthermore, Ofwat noted that its PR24 FD provided enhanced risk protection compared to PR19 and it expected this to reduce beta risk.[483]

7.528   Furthermore, Ofwat stated that CEPA's analysis found that a very long (16.5 year) spot daily beta gave an average unlevered beta for Severn Trent and United Utilities of 0.283 which was very close to the midpoint of Ofwat spot 5- and 10-year beta, giving them confidence the range was consistent with a long span of data and was representative of the type of risks investors might expect over the long run.[484]

7.529   Ofwat noted its long-standing approach from previous controls has been to not make ex-ante adjustments to econometric estimates of beta in anticipation of how betas might change in the ensuing control period.[485] It submitted that no adjustments were made at PR09 to reflect the move to a revenue control, or at PR19 to reflect cost of new debt indexation, despite both changes arguably having a downward impact on systematic risk.[486] Ofwat noted this approach reflected difficulties in accurately calibrating the impact of regulatory changes on betas.[487]

7.530   While CEPA suggested an adjustment for capital intensity was not necessary for PR24, Ofwat noted that selecting an allowed return on equity in the upper end of its range would support the companies to secure financing for the PR24

[479] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p37.
[480] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p37.
[481] Ofwat (2024) draft determinations: Aligning Risk and Return, Allowed Return appendix, p38.
[482] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p47.
[483] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p47.
[484] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p58.
[485] Ofwat (2024) draft determinations: Aligning Risk and Return, Allowed Return appendix, p41.
[486] Ofwat (2024) draft determinations: Aligning Risk and Return, Allowed Return appendix, p41.
[487] Ofwat (2024) draft determinations: Aligning Risk and Return, Allowed Return appendix, p41.

investment programme. Therefore, Ofwat proposed an allowed return on equity of 5.10% which was the rounded upper-bound of their cost of equity range.[488]

Parties' submissions

Disputing Companies

7.531   All Disputing Companies submitted that Ofwat's beta estimates did not reflect the increase in risk in the sector at PR24.[489] All Disputing Companies included the effects of forward-looking risk in their beta or cost of equity estimations as they submitted that it was necessary to properly reflect the increase in risk.

7.532   Anglian stated that 2-year betas have been significantly more responsive to the changes in policy towards greater investment.[490] Oxera, Anglian's advisers, submitted that the 2-year beta estimates may be the most reflective of the forward-looking risk expected for AMP8.[491] Oxera submitted that its focus on the 2-year estimates for the upper end of its range reflects the heightened risk environment facing the sector.[492]

7.533   South East submitted that the CMA could widen the comparator set to bring in data from companies like National Grid that have encountered a step up in investment requirements several years earlier than water companies.[493]

7.534   South East also submitted that the CMA could also ensure that its PR24 estimate is positioned logically against previously used beta values (South East submitted the PR19 beta as an example)[494] and against the betas that are being used currently in other comparator sectors (eg the RIIO-3 beta for energy network companies).[495]

7.535   KPMG, South East's and Southern's advisers, submitted that the sector is no longer in a steady state and one of the most significant drivers of risk relevant to beta during AMP8 is the increase in capital intensity. KPMG submitted three different analyses on the changes in risk for PR24.

(a)   KPMG submitted that National Grid may provide useful evidence as its historical capital intensity aligns more closely with the projected capital intensity for PR24 (with the caveats that National Grid's historical capex

[488] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p84.
[489] Southern SoC, p46 paragraph 59, Northumbrian SoC, paragraph 47 and appendix 1 section 3.4.4, Wessex SoC, paragraph 10.12 (c).
[490] Anglian SoC, paragraph 754.
[491] Oxera (2025) PR24 Cost of equity estimation, p23.
[492] Oxera (2025) PR24 Cost of equity estimation, p28.
[493] South East SoC, paragraph 6.21.
[494] Ofwat's PR19 unlevered beta was 0.29 and the CMA's PR19 mid-point unlevered beta was 0.29. CMA (2021) Final report, p881 and Ofwat (2019) PR19-final-determinations-Allowed-return-on-capital-technical-appendix.pdf, p4.
[495] South East SoC, paragraph 6.21.

intensity did not fully capture the increase at PR24 and that there was a growing perception of greater risk in the water sector compared to energy).[496] KPMG estimated that the 10-year beta for National Grid was 0.33, which was above the midpoint of its BAU[497] beta range of 0.32.[498] KPMG stated that its analysis of National Grid's beta suggested that the upper half of its beta range was more relevant for estimating a forward-looking beta.[499]

(b)   KPMG also investigated the relationship between capital intensity and beta based on the analysis of non-financial UK stocks included in the FTSE 350. It classified companies into ten equally sized portfolios to form decile portfolios every year based on their capital intensity ratios.[500] KPMG performed a 10-year CAPM regression on each portfolio to estimate the portfolio betas and found a positive correlation between equity beta and capital intensity ratio.[501] KPMG used this analysis to estimate a forward-looking beta of 0.37.[502]

(c)   KPMG also considered evidence from translating the impact of the increasing capex intensity on RoRE range to the equity beta. This was because regulators typically consider risk in RoRE terms.[503] KPMG noted that equity beta can be decomposed into the correlation between a company's returns and the market portfolio, multiplied by the ratio of the company's return volatility to that of the market portfolio.[504] It noted that the increase in RoRE variance indicated higher return volatility for the notional company.[505] Based on the difference in the total risk exposure associated with the increasing capex intensity, KPMG estimated an unlevered beta of 0.36 to capture forward-looking risk.[506]

7.536   Based on the RoRE risk evidence and the relationship between capital intensity and beta, KPMG uplifted the midpoint of the beta range.[507] KPMG narrowed the overall range to reflect only the upper half, adopting a beta range of 0.32-0.36.[508]

7.537   In relation to capex-to-RCV ratios, KPMG submitted that a more relevant measure would be the price control average capex-to-opening RCV ratio as it captures the

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[496] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 6.3.30.
[497] BAU beta refers to business-as-usual beta. It is the beta that reflects the company's ongoing activities under normal circumstances. It reflects the risk profile of the business excluding any unusual events.
[498] KPMG (2025) Estimating the Cost of Capital for PR24, p70, paragraph 6.4.3.
[499] KPMG (2025) Estimating the Cost of Capital for PR24, p70, paragraph 6.4.5.
[500] KPMG (2025) Estimating the Cost of Capital for PR24, p70, footnote 151. This was calculated as capital expenditure divided by opening total assets, excluding opening long-term receivables and current assets.
[501] KPMG (2025) Estimating the Cost of Capital for PR24, p70, paragraph 6.4.6–6.4.8.
[502] Southern SoC, p451, paragraph 254.
[503] KPMG (2025) Estimating the Cost of Capital for PR24, p73, paragraph 6.4.13.
[504] KPMG (2025) Estimating the Cost of Capital for PR24, p74, paragraph 6.4.18.
[505] KPMG (2025) Estimating the Cost of Capital for PR24, p74, paragraph 6.4.19.
[506] KPMG (2025) Estimating the Cost of Capital for PR24, p75, paragraph 6.4.25.
[507] KPMG (2025) Estimating the Cost of Capital for PR24, p78, paragraph 6.6.3.
[508] KPMG (2025) Estimating the Cost of Capital for PR24, p78, paragraph 6.6.4.

cumulative investment commitment and accounts for the scale of the activity relative to the size of the business.[509]

7.538   Kairos, Northumbrian and Wessex's advisers, submitted it expected the forward-looking beta to be above the mid-point of its unconditional beta range estimated using historical data given the step change in investment at PR24.[510]

7.539   Kairos assessed whether its unconditional betas was reflective of forward-looking beta estimates for PR24.[511] Kairos recognised that regulated water companies benefit from risk mitigation mechanisms under the regulatory regime that may not expose investors to the same level of risk as non-regulated companies.[512]

7.540   Kairos investigated international evidence on the relationship between changes in investment and CAPM beta for US, European and other developed market privatised utilities.[513] Kairos found that, with the exception of the lowest investment portfolios, the general tendency was for the CAPM beta to increase as investment increased.[514]

7.541   Kairos then tested for an effect from capital expenditure on estimates of beta for the UK listed water comparators Severn Trent, United Utilities and Pennon.[515]

7.542   Kairos noted that due to the risk mitigation mechanisms, it examined whether there is a relationship between investment and beta for regulated water companies specifically. Kairos conducted an analysis regressing excess returns on portfolios of the three listed water companies over the return provided by short-dated government-issued bills against excess returns of the FTSE All Share Index, and observable variables that proxy for the level of 'capital intensity'.[516]

7.543   To proxy for capex intensity Kairos considered the amount of prevailing capital expenditure expressed as a proportion of: (i) lagged observations of total assets, (ii) lagged observations of property, plant and equipment, and (iii) concurrent observations of the enterprise value.[517] Kairos found statistically significant evidence that increases in capex intensity were associated with increases in beta for portfolios of listed comparators comprised of Severn Trent and United Utilities and Pennon, across all three proxy measures of capex intensity.[518]

[509] KPMG (2025) Estimating the Cost of Capital for PR24, p75, paragraph 6.4.29.
[510] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp3–4, paragraph 6(a).
[511] Kairos (2025) Setting the Allowed Return on Equity for PR24, p48, paragraph 162.
[512] Kairos (2025) Setting the Allowed Return on Equity for PR24, p49, paragraph 165.
[513] Kairos (2025) Setting the Allowed Return on Equity for PR24, p49, paragraph 165.
[514] Kairos (2025) Setting the Allowed Return on Equity for PR24, p51, paragraph 172.
[515] Kairos (2025) Setting the Allowed Return on Equity for PR24, p49, paragraph 165.
[516] Kairos (2025) Setting the Allowed Return on Equity for PR24, p51, paragraph 174.
[517] Kairos (2025) Setting the Allowed Return on Equity for PR24, p52, paragraph 176.
[518] Kairos (2025) Setting the Allowed Return on Equity for PR24, p52, paragraph 178.

7.544   The evidence on capex was used in Kairos cost of equity range and considered more weight should be placed at the top of its cost of equity range.[519]

Ofwat

7.545   Ofwat reiterated some of its PR24 FD reasoning in its reply, emphasising that adjustments to beta for capex intensity were not commonplace in UK regulation, that any adjustment would need to take into account other changes to the risk and uncertainty package at PR24, that evidence from unregulated firms was unlikely to be relevant, that the lack of demand risk meant that operational gearing is a less significant driver of risk, and that there was a real risk of double-counting to the extent the estimated betas already reflect the market view of risks.[520]

7.546   Mason, Robertson and Wright, Ofwat's advisers, submitted that the betas on the deciles of KPMG's analysis were close to or above 1, so well above the betas of the water companies.[521] It submitted that this points to the real difficulties of using not just non-water, but also non-regulated companies to make inferences about the betas of regulated water companies.[522]

7.547   Mason, Robertson and Wright also considered Kairos analysis. It found that after excluding the COVID-19 dummy variable from the capex regression of Severn Trent and United Utilities, the effect of capex on beta for Severn Trent was statistically insignificant, although its significance for United Utilities remained.[523] Therefore it concluded that the COVID-19 period played some sort of role in Kairos' results.[524] It also noted that with limited variation of capex intensity in Kairos' sample, considerable caution needed to be exercised when making inferences about (out-of-sample) predictions of how beta will alter with substantially higher levels of investment.[525]

7.548   In its response to the CMA PR24 PD, Ofwat submitted that it welcomed the CMA's high evidential bar for applying adjustments to econometric estimates, recognising the informational value of raw data from listed comparators, and the inherent complexity of correctly calibrating such adjustments.[526]

[519] Kairos (2025) Setting the Allowed Return on Equity for PR24, p75, paragraph 242.
[520] Ofwat, Response to common issues on risk and return, pp118–119.
[521] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p12, paragraph 2.20.
[522] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p12, paragraph 2.20.
[523] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p12, paragraph 2.22.
[524] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p12, paragraph 2.22.
[525] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p12, paragraph 2.24.
[526] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.33.

Disputing Companies' reply

7.549   In their response, the Disputing Companies submitted that not including a dummy variable to represent the Covid period in the regression analysis to investigate the relationship between capex intensity and beta, as Mason, Robertson and Wright have done, biased estimated coefficients.[527]

7.550   The Disputing Companies noted that while regulatory protections may mitigate the impact of high capex intensity on operating leverage this dynamic has been explicitly considered in KPMG's March 2025 analysis.[528] They noted that the analysis adopted a deliberately conservative interpretation of evidence from non-regulated sectors to reflect the unique characteristics of the regulated water industry.[529]

7.551   In its response to the CMA PR24 PD, KPMG submitted that capital intensity analysis provides a robust empirical approach for quantifying its impact on betas and addressing a key limitation of relying on long-run historical betas in a dynamic risk environment.[530] It submitted that applying a conservative capital intensity adjustment to the lower bound results in an unlevered beta estimate of at least 0.30 for both June and September cut-offs.[531]

Third Parties

7.552   MCC, CCW's advisers, agreed with Ofwat's reasoning and noted that the consequences of a large investment programme should largely be diversifiable and therefore should not impact the beta estimate.[532]

7.553   Compass Lexecon submitted supplementary evidence on the effect of higher operational gearing[533] on beta on behalf of the Thames Investor Group. It proposed a theoretical framework for linking changes in operational gearing to beta and estimated an upward adjustment of around 0.03 to Ofwat's unlevered beta.[534]

7.554   It submitted that Ofwat's approach does not capture the circumstances in which the regulated companies will operate during AMP8 and, in particular, the extraordinary levels of capital expenditure (which according to Compass Lexecon increase operational gearing). Specifically, Compass Lexecon noted that the

[527] Disputing Companies (2025) Joint reply to Ofwat's responses, p19, paragraph 81.
[528] Disputing Companies (2025) Joint reply to Ofwat's responses, p20, paragraph 85.
[529] Disputing Companies (2025) Joint reply to Ofwat's responses, p20, paragraph 85.
[530] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.2.11
[531] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 8.2.12
[532] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p29, paragraph 85.
[533] Operational gearing is a measure of the relative proportion of fixed versus variable costs of a firm. In the context of PR24, Compass Lexicon estimates operational gearing as a proportion of capital expenditure to operating expenditure.
[534] Thames Investor Group (2025) Third party submission on the Water PR24 References, Annex 4: Compass Lexecon (2025) Third-party submission on behalf of Investor Group, p22, paragraph 2.18(a).

historical data Ofwat relied on to estimate the beta will reflect the level of risk that applied historically, and it cannot take into account the increased risk arising from higher operational gearing.

7.555   It submitted an estimated industry-wide upwards adjustment to beta to compensate for higher market risk exposure resulting from the higher levels of operational gearing in AMP8. The calculations are set out in some detail in the Compass Lexecon report, with the basic proposition that cash flows should be split into 'standard cash flows' with AMP7 risk and 'extraordinary capital expenditure' with zero beta risk, and that the total NPV of all future cash flows should be set to zero. Using this framework, Compass Lexecon estimates the increase in in industry-wide allowed revenues which it considered would be necessary to uphold the NPV-zero principle. It then translated the estimated increase in allowed revenues in an indicative industry-wide beta adjustment which in turn results in a higher cost of equity and WACC.[535]

7.556   In its response to the CMA PR24 PD, Thames Investor Group submitted that the CMA PD provided an inadequate beta adjustment for AMP8 capital intensity.[536] It submitted that the reliance on short-term betas insufficiently accounts for structural, forward-looking changes.[537] It submitted that this is because more than 60% of the data sample used at PD is unlikely to reflect the increase in the level of operational gearing.[538]

7.557   Compass Lexecon submitted that it disagrees that it is not possible to isolate the impact of the increase in capital intensity on beta and that there is not a clear methodology for doing so and submitted it had provided such a methodology in its first report.[539] Compass Lexecon estimated that an appropriate adjustment to the CMA's PD unlevered beta of 0.31 would be between zero and 0.03.[540]

Our assessment and decision

7.558   We do not manually adjust our econometric beta estimates for changes in risk at PR24. We recognise that intuitively there may be a theoretical link between beta and capital intensity. However, there is no clearly established methodology on how to estimate the impact of forward-looking changes, including forward-looking risk, on econometric beta estimates and we therefore consider that applying manual adjustments would risk introducing additional errors to our beta range.

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[535] Thames Investor Group (2025) Third party submission on the Water PR24 References, Annex 4: Compass Lexecon (2025) Third-party submission on behalf of Investor Group, paragraph A.10.
[536] Thames Investor Group (2025) Response to CMA PR24 PD, paragraph 23.
[537] Thames Investor Group (2025) Response to CMA PR24 PD, paragraph 23.
[538] Thames Investor Group (2025) Response to CMA PR24 PD, paragraph 23. Paragraph 2.12.
[539] Thames Investor Group (2025) Response to CMA PR24 PD - Annex 1, paragraph 6.4 and 6.20.
[540] Thames Investor Group (2025) Response to CMA PR24 PD - Annex 1, paragraph 6.23.

7.559   We broadly agree with Ofwat's approach in the PR24 FD, that although capital intensity is increasing at PR24, there is a question of how material that increase is and therefore what impact that might have on the beta, if any. While we recognise that there are different ways to measure capital intensity, we find Ofwat's analysis of Capex to RCV for PR24 FD relative to previous prices controls, including in other sectors, informative.[541] Although the level of capital intensity is increasing at PR24 it is still below the levels observed in recent energy price controls and for Heathrow T5.

7.560   We also consider that the Disputing Companies have focused on one aspect of risk (capital intensity) without due consideration of how other factors may be changing risk, in particular, the various increased risk protections in this price control relative to the previous one.

7.561   In principle, we consider that there may be a link between capital intensity and risk. As the value of the firm can be thought of as the net present value of revenues less costs, a greater share of capital costs (which tend to be relatively fixed) is likely to increase the volatility of returns. However, the extent to which some of that increase in risk is systematic and how much of that risk is already picked up through our beta estimates is difficult to unpick.

7.562   Going back to our earlier observation that the water sector is relatively unusual in having pure-play comparators we can use to estimate beta, there is an even stronger case for not adjusting the underlying market data.

7.563   We note that none of the Disputing Companies suggest a mechanistic adjustment to the beta for the increase in capital intensity at PR24. Instead, the Disputing Companies use this evidence to support their selection of the overall beta range and point estimate. We broadly agree with the approach taken, to not manually adjust econometric beta estimates, but disagree with the weight given to the empirical evidence of the relationship between beta and capital intensity presented by the Disputing Companies and their advisers.

7.564   As set out above, KPMG and Kairos undertook different types of analysis to estimate the impact of increasing risk in their beta ranges. These analyses primarily related to capex intensity and betas for non-UK regulated water companies.

7.565   Our view is that a limitation of these methodologies is that they all apply different measures of capital intensity, leading to results that are not necessarily comparable, especially in the context of UK water companies. Even if this analysis finds a statistically significant relationship between some measure of capital

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[541] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p48.

intensity and beta, we do not consider that we can directly use it to assess what beta range is more appropriate.

7.566   Compass Lexecon submitted a different approach to KPMG and Kairos for estimating the impact of increasing capital intensity on beta. Our view is that this approach also has limitations. While we understand the proposed intuition that higher capital expenditure may, all else equal, increase the ratio of fixed costs, which may in turn impact the volatility of net cash flows (returns) to the firm, we do not agree that the link between higher capital intensity is clear cut and can be estimated in the way proposed by Compass Lexecon. It suggests that cash flows can be neatly separated into 'business as usual' and 'extraordinary', with a separate beta assigned to each. In practice, the increase in capital expenditure reflects a mix of different factors – changes in the scale of business-as-usual activity, changes in unit costs, and delivery of new projects and service improvements. This information is gradually reflected in share prices, and therefore it cannot be said that historical betas ignore this information altogether or that we can confidently assign separate betas to different activities, on the basis of available information. Therefore, we do not consider the proposed approach suitable for estimating the impact of higher capital intensity on beta.

7.567   We also do not include National Grid's beta in our analysis. National Grid is governed by a different regulatory framework, it is not a 'pure play' company and has a significant part of its operations outside the UK, which will result in differences in risk exposure compared to water companies. Even if National Grid has comparable capital intensity to the water companies, all these other factors mean that its beta is not necessarily comparable to betas of the water companies.

7.568   The estimation of betas involves analysis of historical data. However, more recent periods of that data will reflect investors' expectations of changes in risk in the future. Our FD data cut-off of 30 November 2025 incorporates more data points from the PR24 period, increasing the proportion of our data sample which reflects investors' expectations of changes in risk compared to our PD. To the extent that systematic risk is increasing, the increase can be captured in more recent beta estimates and by giving weight to shorter-term beta estimates. We discuss this further in our conclusion on beta below.

7.569   In response to Compass Lexecon that more than 60% of our PD data sample was unlikely to reflect the increase in operational gearing (on the basis that companies submitted their business plans to Ofwat in October 2023), first, as noted above, our data set now includes another six months of data. Second, and more importantly, there are multiple considerations in selecting appropriate time period for estimating the beta and there are trade-offs between using short-term and long-term data, which we discuss next.

The use of long-term versus short-term betas

7.570   Betas can be estimated over different historical time periods. Throughout the PR24 process, Ofwat placed most weight on longer-term beta evidence (10-year and 5-year). The Disputing Companies have adopted a mix of approaches with some placing most weight on longer-term evidence and some also considering shorter-term evidence. All parties have also used spot betas (ie betas as estimated at the relevant cut-off date) rather than rolling averages, although there is regulatory precedent for both approaches.

7.571   In the CMA PR24 PD, we relied on spot 3-year and 10-year betas to derive our range.

   (a)   We considered that it was appropriate to consider long-term beta trends, given the relative stability of long-term betas.

   (b)   We considered that 3-year beta evidence allowed us to appropriately capture any changes in forward-looking risk, exclude the impact of COVID-19, and include Pennon in the comparator set.

   (c)   We chose to use spot betas because this approach was adopted by all parties and it ensured we were not overweighing certain data points.

7.572   Our proposed approach has prompted further responses from the parties on the appropriate weight to give to different beta evidence, and on the use of spot betas. We set out the relevant submissions on these issues (both raised initially in the statements of case and in responses to the CMA PR24 PD) in this section and then provide our assessment.

Parties' submissions

   Disputing Companies

7.573   Oxera submitted that the 2-year beta provides a more immediate and responsive measure of changes, capturing the most recent shifts in investor sentiment and reflecting the current environment of increased regulatory pressure, operational challenges, and evolving public expectations.[542] It submitted that Ofwat's choice to underweigh 2-year beta evidence underestimated the risks facing the sector, which are likely to have significant implications for future performance and investor returns.[543]

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[542] Oxera (2025) PR24 Cost of equity estimation, p22.
[543] Oxera (2025) PR24 Cost of equity estimation, p23.

7.574   Anglian submitted that Ofwat's approach deviates from Ofwat's PR19 approach of using 2-year and 5-year betas.[544] It submitted that Ofwat's concern that the 2-year beta exhibits greater volatility and a degree of mean reversion does not outweigh their relevance in PR24, given the deficiencies of longer-term betas in assessing the forward-looking risks at a significant economic break point.[545]

7.575   KPMG, South East and Southern's advisers submitted that longer-term estimates offer a larger sample size, improving precision and reliability by reducing random variations, smoothing short-term fluctuations, and mitigating the impact of temporary market conditions.[546] KPMG submitted that a 10-year window is broadly representative of the regulatory regime without including less relevant data from the early 2010s.[547]

7.576   Kairos, Northumbrian and Wessex's advisers, submitted that in the UKRN 2018 study, two academic authors advocated for deviating from the standard regulatory practice of using a range of short-term sampling windows, in favour of estimating unconditional betas.[548] It submitted that unconditional beta estimates are the best estimate of beta, given the uncertainty associated with estimating conditional betas over long-term horizons, and for this reason estimate c.10-year betas.[549] Kairos submitted that equity beta is best estimated as an unconditional beta, using a long-run of historical data for which the operating environment is deemed to be sufficiently reflective of potential outcomes for PR24.[550]

7.577   In its response to CMA PR24 PD, South East submitted that the CMA's reliance on 10-year betas at the lower end of the range places less weight on forward-looking risk, which is better captured in more recent data.[551] Its inclusion without adjustment to capture changes in risk facing the sector introduces a systematic downwards bias to the PD beta range.[552]

7.578   KPMG submitted that the PD lower bound appears downward biased, as it is based on long-term betas that do not capture changes in the sector's risk profile over the last two to three years.[553]

Ofwat

7.579   In its response to the CMA PR24 PD, Ofwat submitted that the CMA should give due regard to the issue of high volatility associated with short-run estimation

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[544] Anglian (2025) Response to CMA PR24 PD, paragraph 753.
[545] Anglian (2025) Response to CMA PR24 PD, paragraph 755.
[546] KPMG (2025) Estimating the cost of capital for PR24, paragraph 6.2.10.
[547] KPMG (2025) Estimating the cost of capital for PR24, paragraph 6.2.10.
[548] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraph 125.
[549] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraph 6.
[550] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraph 202.
[551] South East (2025) Response to CMA PR24 PD, paragraph 6.26.
[552] South East (2025) Response to CMA PR24 PD, paragraph 6.26.
[553] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraph 1.1.13.

windows.[554] It also noted that the CMA did not consider other permutations of beta which were featured in the CMA's PR19 redetermination.[555]

7.580 Ofwat submitted that its choice to use spot daily data was a finely balanced judgment, taking into account its assessment of the data for the determination (including weekly, monthly and rolling estimates).[556] It submitted that in its reply to statements of case Ofwat urged the CMA to not prematurely discount lower frequency data due to evidence that lower frequency data was capable of more clearly capturing the defensive nature of water stocks.[557]

7.581 In its response to the PR24 PD, Ofwat submitted that it disagreed with the application of the 3-year daily beta for an equally-weighted portfolio of Severn Trent, United Utilities, and Pennon to construct the upper bound.[558] It submitted that this endpoint results in an overstated midpoint estimate of beta because:

(a) It uses a short, spot estimation window, and these windows are volatile and hence unreliable for forecasting purposes;

(b) the CMA has dispensed with other (eg non-spot, non-daily) estimators that it relied on for the PR19 CMA redeterminations, without a convincing rationale for its changed approach; and

(c) Pennon is less reliable as a comparator due to recent instability in its gearing.[559]

7.582 Ofwat submitted that 2-year daily unlevered betas had been highly volatile over the period 2008-2025, ranging from approximately 0.15 to 0.40. The consequence of placing weight on such volatile spot measure of beta is to introduce unpredictable volatility to the estimate of beta, linked the timing of the data cut-off.[560]

7.583 Ofwat noted that instability is also a relevant issue for the CMA's 3-year spot beta estimate, which rose by 0.08 between the monthly averages of September 2024 and September 2025, which is more than the width of the CMA's entire range.[561] it submitted that the CMA's PD unlevered beta midpoint of 0.31 is well above the median for 3-year and 10-year daily water betas.[562] Ofwat concluded that it is

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[554] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.35.
[555] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.40.
[556] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.39
[557] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.39.
[558] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.34.
[559] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.34.
[560] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.36.
[561] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.37.
[562] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.37.

concerned that by placing equal weight on an unsmoothed, volatile estimate, the CMA may be locking in a temporary peak into its beta estimate for 2025-30.[563]

7.584   In support to Ofwat's response to the PR24 PD, Mason, Robertson and Wright submitted short-run betas for United Utilities, Severn Trent and Pennon, estimated using quarterly windows of daily data for the period that CMA focus on for Pennon (March 2022-March 2025).[564] Mason, Robertson and Wright submitted that for all three companies, the short-run beta is very volatile and that none of the short-run betas pass standard tests for stationarity.[565] Mason, Robertson and Wright concluded that a sample of 3 years is insufficient to conclude that Pennon's beta has the necessary statistical or economic properties to be relied upon for regulatory purposes.[566]

Third Parties

7.585   In its response to the CMA PR24 PD, Citizens Advice submitted that short-term betas suffer from upward bias.[567] It submitted that the use of a 3-year sampling period needs to be justified in its own merits, rather than as being required to include a further comparator.[568]

7.586   In its response to the CMA PR24 PD, Yorkshire Water endorsed the CMA's choice of a three-year period over Ofwat's five-year approach and submitted that it reflected a more nuanced and evidence-led regulatory judgment.[569]

7.587   In its response to the CMA PR24 PD, United Utilities submitted that there is recognition that greater weight should be applied to shorter-term beta evidence, however these only feed into the upper bound assessment of the PD beta.[570]

Our assessment and decision

7.588   We are aware that the arguments for and against different estimation windows change from one price control to the next, and this can risk creating inconsistencies in the approach. For example, at PR19, Ofwat used short-term betas but water companies generally argued against that, because such an approach implied lower betas. At PR24, Ofwat chose to use longer-term betas, but some companies are now arguing for using short-term betas (or alternatively

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[563] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.37.
[564] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, paragraph 3.2.
[565] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, paragraph 3.2.
[566] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, paragraph 3.4.
[567] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 18.
[568] Citizens Advice(2025) Response to CMA PR24 PD, paragraph 4(b).
[569] Yorkshire Water (2025) Response to CMA PR24 PD, p2.
[570] United Utilities (2025) Response to CMA PR24 PD, p6.

arguing for adjustments to longer-term betas to reduce the impact of low beta periods).

7.589   Overall, while we are aware of these debates, and the risks of inconsistency, we consider that the choice of estimation windows does require regulatory judgement at each price control, taking into account the various evidence in the round.

7.590   To inform our approach in this decision, our conclusions on the other key issues raised (inclusion of Pennon, the impact of COVID-19, and the impact of capital intensity) provide relevant context. On these three key debates, we conclude that:

(a)   there are no good arguments to exclude Pennon as a comparator post the Viridor sale and post the normalisation of Pennon's gearing. While this means we can more reliably use data after September 2021 to estimate Pennon's beta, this is not a reason to exclude it. Including Pennon is likely to reveal additional information on the relative risk of the sector, not available in previous decisions;

(b)   it is not appropriate to adjust betas for the impact of the COVID-19 pandemic. These periods can provide important insight into relative risk of assets during crises, and it is important to take it into account. However, we can reduce the impact of the pandemic period on our range by giving some weight to betas post all the restrictions (for which we now have around 4 years of data) and by considering sufficiently long-term betas (such as 10 years) which are less affected by the pandemic than other measures of long-term betas (such as 5 years); and

(c)   we agree that capital intensity is increasing on a forward-looking basis, and that this may have some impact on risk. However, we conclude that it is not possible to isolate the impact of this effect on beta. We also consider that more recent beta estimates are likely to incorporate this effect (to the extent that it exists and is material). This is another argument in our view to give some weight to shorter-term beta evidence.

7.591   In relation to the choice of spot versus rolling average betas, we consider this to be a matter of judgement. Our starting point is to prefer spot betas, as rolling averages have the effect of overweighing some data points more than others (by being included multiple times in the rolling averages). However, we agree that rolling averages can be helpful in understanding trends and ensuring we are not picking a point estimate which is unusually high or low relative to the trend.

7.592   We also consider that using daily data is appropriate, given water companies are liquid stocks, and given that daily data leads to greater precision of estimates and avoids the 'reference day' issue. We note Ofwat's and Ofwat's advisers' suggestion to consider lower-frequency betas to help us understand short-term

trends, but, on balance, we consider that different permutations of daily betas can give us enough insight into the underlying trends.

7.593   The table below (Table 7.13) sets out the daily unlevered betas for the three listed companies over different estimation windows.

Table 7.13: Unlevered betas for Severn Trent, United Utilities and Pennon

	2-year spot	*2- year (1-year rolling average)*	*3-year spot*	*3-year (1-year rolling average)*	*5-year spot*	*10-year spot*
Severn Trent	0.315	0.334	0.298	0.319	0.273	0.277
United Utilities	0.300	0.307	0.284	0.299	0.261	0.266
Pennon	0.368	0.375	0.361	0.356		
Average	0.328	0.339	**0.314**	0.324	0.267	0.272
SVT/UU/PNN portfolio*						**0.276**

Note: SVT/UU/PNN portfolio is an equally weighted portfolio of the three stocks, with Pennon added to the portfolio on 1 October 2021.

7.594   Taking into account the various arguments and evidence together, we conclude that an unlevered beta range of 0.276 to 0.314 is a balanced reading of the data.

(a)   Placing weight on longer-term beta evidence is important as long-term betas are relatively stable in this industry (see Figure 7.11 below) and are more statistically reliable than short-term betas. We consider that a 10-year portfolio beta of Severn Trent and United Utilities, with Pennon added to the portfolio from 1 October 2021 is the most appropriate basis to give weight to all three listed comparators in the sample. We use the spot beta of 0.276 to define the lower end of our range. This is a slight change from the CMA PR24 PD in which we used 10-year spot betas for Severn Trent and United Utilities, with no weight given to Pennon.

(b)   Placing weight on shorter-term beta evidence complements the long-term perspective and allows us to give more weight to Pennon, ensure the impact of the COVID-19 pandemic is not over-represented in our overall beta range, and reflect any potential changes in forward-looking risk. Having considered the different frequencies and averages of shorter-term betas (in Table 7.13 above and in Figure 7.11 below), we conclude that our PD approach of using spot 3-year betas remains appropriate. We use a simple average of Severn Trent, United Utilities, and Pennon betas of 0.314 to define the upper bound of our range.

Figure 7.11: 3-year rolling unlevered betas and 10-year rolling unlevered portfolio
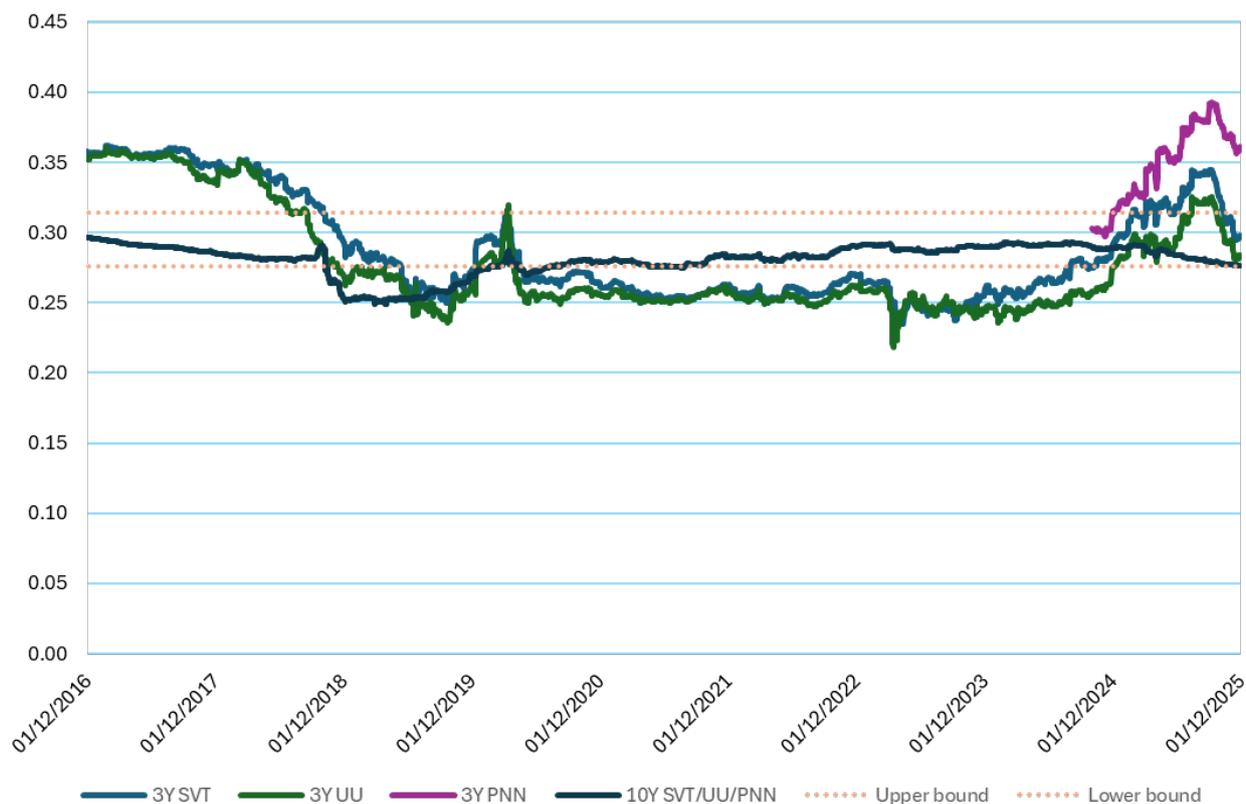
Source: LSEG Refinitiv data and CMA analysis.
Note: the 10-year portfolio beta for Severn Trent, United Utilities and Pennon is an equally weighted portfolio of the three stocks, with Pennon added to the portfolio on 1 October 2021.

Low beta anomaly and CAPM biases

7.595   The Disputing Companies and their advisers have raised other issues with Ofwat's estimation of betas in their submissions: low beta anomaly bias and attenuation bias.

Parties' submissions

Disputing Companies

7.596   We received submissions on the low beta anomaly and CAPM biases from Oxera and Kairos.

7.597   Oxera submitted that there is an extensive academic literature suggesting that low beta, low volatility companies are characterised by a cost of equity implied by the CAPM which understates their actual observed returns earned.[571]

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[571] Oxera (2025) PR24 Cost of equity estimation, p20.

7.598   Oxera and Kairos submitted that market evidence shows that the security market line, which portrays the rate of return as a function of systematic risk, is empirically flatter than predicted by the CAPM-implied beta.[572] This means that by underestimating the beta, the CAPM understates the rate of return required for systematic risk.[573]

7.599   Oxera and Kairos submitted that because regulated utilities usually have equity betas lower than one, the CAPM might underestimate the required return.[574] For this reason Oxera noted that it was reasonable to choose a beta estimate towards the top-end of the beta estimate range.[575] Kairos also submitted that the CAPM suffers from omitted variables bias and has been proven to perform particularly poorly for low beta stocks.[576]

7.600   Oxera also noted that another empirical issue (the attenuation bias) might have an effect on betas, citing Jegadeesh et al.[577] Oxera submitted that the academic literature suggests that this bias causes CAPM-based betas to tend towards zero.[578] It submitted that this is caused by the presence of measurement errors in the market returns.[579] Oxera concluded that caution should be exercised when selecting a beta point to ensure that the cost of equity does not significantly underestimate the return.[580]

Ofwat

7.601   Mason, Robertson and Wright noted that Jegadeesh et al. looked at two-stage regressions.[581] The errors-in-variables problem which is present in the second stage gives rise to the attenuation problem cited by Oxera.[582] They noted that this problem is absent in the CAPM used by regulators, as equity betas are estimated in a single-stage regression.[583]

7.602   Mason, Robertson and Wright acknowledged that in the standard one-stage beta estimation regression the expected return on the market portfolio is measured with

[572] Oxera (2025) PR24 Cost of equity estimation, p20; Kairos (2025) Setting the Allowed Return on Equity for PR24, pp62–63, paragraph 213(b).
[573] Oxera (2025) PR24 Cost of equity estimation, p20.
[574] Oxera (2025) PR24 Cost of equity estimation, p20; Kairos (2025) Setting the Allowed Return on Equity for PR24, pp62–63, paragraphs 213–214.
[575] Oxera (2025) PR24 Cost of equity estimation, p20.
[576] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp62–63, paragraph 213.
[577] Oxera (2025) PR24 Cost of equity estimation, p20 and Jegadeesh, N, Noh, J, Pukthuanthong, K, Roll, R and Wang, J (2019) 'Empirical tests of asset pricing models with individual assets: Resolving the errors-in-variables bias in risk premium estimation', *Journal of Financial Economics*, pp273–298.
[578] Oxera (2025) PR24 Cost of equity estimation, p20.
[579] Oxera (2025) PR24 Cost of equity estimation, pp20–21.
[580] Oxera (2025) PR24 Cost of equity estimation, pp20–21.
[581] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.28.
[582] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.28.
[583] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.28.

error.[584] They noted this can be addressed through tried-and-tested techniques such as instrumental variables and that the FTSE All Share could be replaced with a global stock portfolio, so that the home bias could decrease.[585]

7.603 Mason, Robertson and Wright concluded that regulators should look at a wide range of estimates of beta and form a view in the round.[586] The concerns on underestimation of expected returns on low beta stocks should be reflected in the in-the-round assessment after the estimation of all CAPM components to avoid double or triple counting.[587]

Our assessment and decision

7.604 We do not dispute that the CAPM has empirical shortcomings and, as with any asset pricing model, it comes with estimation challenges.

7.605 However, the debate tends to be heavily skewed to one side, with companies pointing out various research which supports the hypothesis that the allowed cost of equity is too low. The low-beta anomaly, the Brennan CAPM we discussed earlier and the multi-factor models we discuss below are all, to some extent, motivated by empirical findings that the CAPM does not fit the historical data that well. We do not dispute that many of these arguments are based on sound academic research, but we are also wary that there is a risk of cherry-picking and that there are likely to be arguments on the other side which suggest our methodology overestimates the cost of equity. To give an example, while we use a stock market index to estimate the beta, an argument can be made for using a global index, or better yet, if the data permitted, a global index of all traded assets (which is what theoretically should be used in the CAPM). A beta relative to such an index might look very different to our estimates, but we simply cannot control for all such issues in our estimation.

7.606 We conclude that there is a risk of double counting various errors in the estimation, if we were to give weight to each of these arguments. We also reiterate our preference for a consistent and proportionate approach to estimating the allowed return.

7.607 Overall, while Oxera and Kairos point out a few interesting pieces of academic research, we do not consider that we need to tweak our estimated beta range to explicitly take them into account or to do so when picking a point estimate.

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[584] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.29.
[585] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.29.
[586] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.30.
[587] Mason, R, Robertson, D and Wright, S (2025) A report on allowed return issues in disputing companies' statements of case, p15, paragraph 2.30.

Debt beta

7.608   Debt beta is a measure of systematic risk borne by bondholders. Debt beta has a relatively small effect on the overall WACC and is generally more difficult to measure than equity beta as bonds are less well traded than equities and so the quality of bond returns data is likely to be lower than that of share price data.

7.609   There are four ways to estimate debt beta:

(a)   the direct approach involves regressing bond returns directly on equity market returns;

(b)   the indirect approach requires a two-step methodology. The first step involves regressing a company's bond returns against returns on an index of government bonds and the returns on the shares of the same company. The second step is to multiply the coefficient on the company's equity returns (this is the elasticity of debt with respect to equity) obtained from the regression in the first step, by the company's equity beta;

(c)   the structural approach involves viewing equity as a call option on the firm's assets, and debt a put option, with a strike price equal to the face value of debt. Under particular assumptions, the Black-Scholes formula can be used to value those options. In turn, the debt beta can be calculated from these resulting values; and

(d)   the decompositional approach involves decomposing the debt spread (the spread between yields on corporate and government bonds) into three components—default premium, default risk premium and liquidity premium.

7.610   The debt beta range in UK regulatory decisions since December 2019 has been 0.05 to 0.125.[588]

Ofwat PR24 FD approach

7.611   Ofwat's range is informed by FTI's 2022 report, which provided four different approaches to estimating debt beta (direct, indirect, structural and decompositional).[589] Ofwat noted that FTI's debt beta range of 0.05 to 0.15 has a high relevance as it drew on more recent data and covered more approaches than the PR19 Final Report.[590]

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[588] UKRN, 2024 UKRN Cost of Capital Report, p20, table 8.
[589] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p55 and FTI Consulting (2023) FTI Consulting - Early view of water sector betas for PR24 (updated June 2023) - Ofwat.
[590] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p55.

7.612 Ofwat noted that more recent evidence suggests that the water sector debt beta may have increased.[591] It noted that Barclays assumed a debt beta of 0.2 and that the debt risk premium of listed water bonds yields was higher relative to historic levels.[592] Ofwat however noted that its notional gearing, of 55%, was lower compared to PR19's 60% and that there was evidence that gearing and debt beta may be positively correlated.[593]

7.613 Ofwat concluded that a debt beta range of 0.05 to 0.15 was a reasonable assumption.[594]

Parties' submission

Disputing Companies

7.614 Kairos, Northumbrian and Wessex's advisers, submitted that it considered that 0.05–0.10 represented an appropriate range for the debt beta.[595] However, it set a range between the midpoint and the top of the range, 0.075–0.1 in light of the evidence suggesting that there is a perception that the relative risk associated with an investment in regulated water assets has increased and Ofwat's recognition that the cost of debt for the notionally financed company has risen in relative terms.[596]

7.615 KPMG, South East and Southern's advisers, applied a debt beta of 0.10.[597] Southern, despite applying a 0.1 debt beta, also cited a Barclays estimate of 0.40 asset beta for the water sector, following Ofwat's PR24 FD, based on a debt beta point estimate of 0.2.[598]

Our assessment and decision

7.616 Debt beta was broadly an uncontentious issue between the Parties and we did not receive many submissions on it. Three of the five Disputing Companies used Ofwat's PR24 FD debt beta range of 0.05–0.15, while Kairos, advising Northumbrian and Wessex, used a different debt beta range, albeit its debt beta range of 0.05–0.10 is within Ofwat's range.

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[591] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p55.
[592] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p55.
[593] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, pp55–56; CEPA (2019) 'Considerations for UK regulators setting the value of debt beta', pp14–15.
[594] Ofwat (2025) final determinations: Aligning Risk and Return – allowed return appendix, p56.
[595] Kairos (2025) Setting the Allowed Return on Equity for PR24, p58, paragraph 198.
[596] Kairos (2025) Setting the Allowed Return on Equity for PR24, p58, paragraph 198.
[597] KPMG (2025) Estimating the Cost of Capital for PR24, p78, Table 28.
[598] Southern SoC, p454, paragraph 271 and footnote 111.

7.617   We note that there is significant calculation uncertainty associated with debt beta. Debt beta also has a relatively small effect on the overall WACC, so changes to the range would not significantly affect our overall cost of equity results.

7.618   Although Kairos and Ofwat's submissions suggest that there is a perception that the relative risk associated with debt investment in regulated water assets has increased, we tested how sensitive our re-levered equity beta range is to changes in debt beta and found that it does not change materially with different debt betas.

7.619   We therefore retain Ofwat's final determination debt beta range of 0.05–0.15.

CMA conclusions on beta

7.620   All in all, we derive our unlevered beta range as follows.

(a)   We derive the lower end of our range using a 10-year daily spot portfolio beta for Severn Trent, United Utilities and Pennon, with Pennon added to the portfolio from 1 October 2021. We consider it is important to consider long-term trends, to aid consistency and predictability, and recognising that shorter-term betas tend to be more volatile.

(b)   We derive the upper end of our range using a simple average of the Severn Trent, United Utilities and Pennon 3-year daily spot betas. This allows us to give more weight to Pennon and to ensure that the impact of the COVID-19 pandemic is not over-represented in our overall beta range. This approach also recognises that shorter-term betas are likely to be more responsive to any changes in forward-looking risk.

7.621   As shown in Table 7.14, this gives us an unlevered beta range of 0.276 to 0.314, with a mid-point of 0.295.

Table 7.14: CMA beta range

Parameter	Lower bound	Upper bound
Unlevered beta	0.276	0.314
Debt beta	0.15	0.05
Listed comparator gearing	53.94%	56.53%
Asset beta	0.36	0.34
Notional gearing	55.0%	55.0%
Re-levered equity beta	0.61	0.70

Source: LSEG Refinitiv data and CMA analysis.

7.622   We consider this range to be broadly unbiased – ie we do not view either end of the range as more likely. The mid-point of our range is slightly above the estimate

in the PR19 Final Report, implying a slightly higher level of systematic risk compared to PR19.[599]

Cross checks and selecting a cost of equity point estimate

Summary

7.623   We select a point estimate for the cost of equity of 5.70%, 30bps above the mid-point of our CAPM range. This is primarily to reduce the risk of the sector under-delivering on its large-scale capital programme needed to improve services and resilience, given the potential welfare implications of underinvestment. We also note that there is a relatively low debt-to-equity premium implied by the cost of new debt and the mid-point of our CAPM range.

Introduction

7.624   Consistent with standard regulatory practice, we estimate a range for the cost of equity, recognising the inherent uncertainty around the estimates. The table below sets out our CAPM cost of equity range, based on the analysis set out in the sections above.

Table 7.15: CMA CPIH-real cost of equity range

CPIH-real	Low	High
Notional gearing	55.00%	55.00%
RFR	2.40%	2.40%
Total market return	6.70%	7.20%
ERP	4.30%	4.80%
Unlevered beta	0.276	0.314
Debt beta	0.150	0.050
Listed comparator gearing	53.94%	56.53%
Asset beta	0.36	0.34
Re-levered equity beta	0.61	0.70
Cost of equity Appointee	**5.02%**	**5.76%**

Source: CMA analysis

7.625   Given the uncertainty in estimating the cost of equity, it is important to consider other sources to sense check the resulting range and select a point estimate.

7.626   Ofwat selected a point estimate of 5.10%, at the top of its CAPM range. This equated to 28bps above the mid-point of its CAPM range.[600]

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[599] As mentioned in paragraph 7.454, South East submitted that an unlevered beta of 0.28 compares to the CMA's PR19 unlevered beta of 0.29. In PR19, the CMA estimated 0.29 to be the midpoint, with 0.28 and 0.30 as the lower bound and upper bound range. Comparing PR19 midpoint unlevered beta with the PD lower bound range of 0.28 is not appropriate. The midpoint actually moved from 0.29 to 0.32 from PR19 to PR24 PD.
[600] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p7.

7.627   Ofwat noted the following two arguments that it considered were key in selecting a cost of equity point estimate above the mid-point of the range in its PR24 FD.[601]

(a)   Investor sentiment towards the water sector is currently low. Ofwat considered it important that its determinations are seen to support investment and investor confidence at a time when all companies (whether good or poor performers) are expected to continue to raise record levels of debt and equity finance, while competing with other sectors and internationally for the allocation of that capital.

(b)   Companies and their consultants have argued that a large capital programme increases risks associated with capital intensity. Ofwat stated that while CEPA's advice and past regulatory decisions, alongside the other protections it has introduced, suggests that an adjustment for capital intensity is not necessary for PR24, an allowed return on equity that is in the upper end of Ofwat's range should support companies to secure external financing required to deliver the PR24 investment programme over 2025–30.

7.628   In the CMA PR24 PD, we selected a point estimate for the cost of equity of 5.90% from a range of 5.07% to 6.13%, equivalent to 30bps above the mid-point of our CAPM range. This was primarily to ensure the sector is sufficiently attractive to investors to fund the large-scale capital investment programmes in PR24. We also noted that there was a relatively low debt-to-equity premium implied by the cost of new debt and the mid-point of our CAPM range.

7.629   In response to the CMA PR24 PD, Northumbrian welcomed our approach to recognising the principle of aiming-up for consumer welfare impacts and the evidentiary value in a simple top-down analysis of the debt versus equity premium, consistent with how its investors consider alternative opportunities to deploy their capital.[602] However, Anglian[603] and Southern[604] stated that they were concerned that our PD adopted an overly narrow approach to the use of cross-checks and that cross-checks should not be subject to more stringent evidential hurdles than the CAPM.

7.630   Ofwat recognised that our provisional aiming up adjustment of 30bps was comparable to its adjustment of 28bps in its PR24 FD. However, Ofwat noted that its decision had been made due to low investor sentiment at the time and a need to support companies' efforts to secure external financing to deliver their PR24 settlements. Ofwat stated that investors sentiment had improved since then,

[601] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p84.
[602] Northumbrian (2025) Response to CMA PR24 PD, paragraph 331.
[603] Anglian (2025) Response to CMA PR24 PD, paragraph 522.
[604] Southern (2025) Response to CMA PR24 PD, paragraph 7.99.

referencing equity analyst reports, higher MARs premia, recent equity issuances and a reduction in debt risk.[605]

7.631 This section considers the cross checks for the CAPM cost of equity submitted by Ofwat, the Disputing Companies and third parties, as well as other considerations for selecting a point estimate for the cost of equity.

7.632 The UKRN guidance sets out five issues which have been considered in recent regulatory decisions when selecting a point estimate from the CAPM cost of equity range.[606]

(a) **Cross-checks from market evidence**. Since the CAPM is just one model of expected returns, market benchmarks provide a sense-check on the CAPM point estimate when such market data are available.

(b) **The welfare impact from underinvestment**. Views have been set out that given that the true required return is not known, this could result in underinvestment if the allowed return is set too low. It has been argued that the consequences of misstatement are asymmetrical, with underinvestment a worse outcome for customers than over-remuneration.

(c) **Asymmetry in the package of incentives**. The expected returns to capital providers depend not only on the allowed rate of return but also on performance against a range of financial incentives in a price control. If the overall distribution of returns is skewed such that the expected return on equity does not equal the base return on equity, it has been argued it may be appropriate to adjust the base level of allowed return to achieve this.

(d) **Asymmetry in the choice of parameters**. Ranges for the individual CAPM parameters rely on a degree of judgement, and it has been argued that it might be inappropriate to assume that the mid-point of the CAPM range is the most likely point estimate.

(e) **Financeability**. Some regulators model the financial ratios of the regulated entity to assess the adequacy of expected cash flows to service debt payments and to raise new finance on reasonable terms. It has been argued that where modelled cashflow ratios are too low regulators should adjust the allowed return on equity to remedy this.

7.633 The UKRN guidance notes that it has been periodically suggested that regulators should choose a cost of equity point estimate above the midpoint of the CAPM range by default, to address issues (b) through to (e) above. The UKRN guidance

[605] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.54.
[606] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, pp26–27.

cautions against this, and states that there must be clear and convincing evidence that such a decision is in customers interests.[607]

7.634   At PR19, the CMA took account of similar considerations to those outlined in the UKRN guidance when selecting its cost of equity point estimate. The CMA noted that there were three broad arguments for picking a point estimate higher than the midpoint for the cost of equity.[608]

(a)   To promote short- or long-term investment in the water sector and address the risk of an exit of capital if the cost of equity is set too low.

(b)   To reflect structural asymmetry in the overall determination, specifically around the skew in the incentives package.

(c)   To take into account a cross-check on market data and financeability ratios.

7.635   In this section we consider the evidence along the five themes identified by the UKRN guidance (as set out in paragraph 7.632) as we consider that they encompass the right considerations for selecting a point estimate. Specifically in relation to market-based cross-checks, we note that this is an area which has expanded considerably in recent regulatory practice. The CAPM remains the primary methodology for setting the allowed return on equity and we consider that a proportionate approach to cross-checks is required.

Market-to-asset ratios

7.636   In the water sector, market to asset ratios (**MARs**) have become a widely used cross check to the CAPM cost of equity. MARs analysis compares the market value of a listed company to the RCV. A MAR above 1 indicates that the market is willing to pay a premium over the regulated asset value of the business. As the regulated asset value represents the discounted value of future cash flows, a MAR above 1 could be indicative of expected outperformance against future price controls.

Ofwat's PR24 FD approach

7.637   In its PR24 FD, Ofwat calculated an RCV-weighted average MAR premium of 9% (for the three listed water companies). This analysis resulted in an indicative cost of equity range of 4.3%–6.3% using a perpetual dividend growth model and an average of the three listed companies (the individual companies had indicative cost of equity ranges of: United Utilities 4.1–6.1%, Severn Trent 3.6–5.6% and Pennon 5.2–7.2%).[609] Ofwat noted that MARs analysis is widely used by investors

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[607] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p27.
[608] CMA (2021) PR19 final report, pp1057–1058, paragraph 9.1240.
[609] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p69.

and utility equity analysts as a guide to investor sentiment and can provide an indication of the required equity return whilst also noting that there are uncertainties associated with company valuation.[610] Ofwat therefore concluded that MARs analysis is suited to providing an indicative range within which the likely required return on equity lies, rather than the precise calibration of a point estimate.[611]

Parties' submissions

Disputing Companies

7.638   Anglian submitted that a robust MARs analysis supports a significantly higher cost of equity. Anglian stated that updated to January 2025, the MARs range for the cost of equity is 4.95–6.38% CPIH-real, averaged across Pennon, United Utilities and Severn Trent[612] (the individual companies had indicative cost of equity ranges of: United Utilities 4.97–6.30%, Severn Trent 3.75–5.52% and Pennon 6.13–7.34%).[613] Anglian also noted that Severn Trent and United Utilities have material premia over RCV, whereas Pennon does not. Anglian stated that Pennon is more reflective of the sector median, and as such, MARs analysis should use Pennon as the cross check, which would result in a higher indicative cost of equity.[614]

7.639   Northumbrian stated that Ofwat's MARs analysis is based upon an unrealistically low assumption for future growth of relevant RCVs of 0–2%.[615] Kairos suggested an alternative approach to estimating the MARs inferred cost of equity where the value of the stream of dividends is truncated into a short-term period, and a terminal value. Kairos stated that this alternative approach allowed the RCV growth over the short and long-term to be set separately and are more easily interpretable when relying on empirical evidence to support assumptions.[616] Northumbrian argued that using Kairos' approach and updating to a more reasonable assumption for RCV growth, the implied cost of equity range would be 5.2–6.8% (the individual companies had indicative cost of equities of: United Utilities 5.8%, Severn Trent 5.2% and Pennon 6.8%).[617] In response to the CMA PR24 PD, Northumbrian[618] reiterated its comments on MARs analysis and submitted a revised MARs implied cost of equity range of 5.4–6.5%.[619]

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[610] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p67.
[611] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p67.
[612] Anglian SoC, paragraph 674.
[613] Oxera (2025) PR24 Cross-checks to CAPM estimation, Table 3.2, p23.
[614] Anglian SoC, paragraph 674.
[615] Northumbrian SoC, paragraph 585(e).
[616] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraphs 230–231.
[617] Kairos (2025) Setting the Allowed Return on Equity for PR24, p68, Table 17.
[618] Northumbrian (2025) Response to CMA PR24 PD, paragraph 332–335.
[619] Northumbrian (2025) Response to CMA PR24 PD, Figure 32, p98.

7.640   Southern noted that the MAR premium as of September 2025 fell back to the long-term average of 10%. Southern added that it was not clear why MARs dating back to 1993 are relevant given significant changes in the sector since then. Southern stated that more relevant windows should be considered and that the average MAR premium has been higher; for example, it has been 14–16% over the last 10 years and 20 years.[620]

Third Parties

7.641   In response to the CMA PR24 PD, MCC Economics, CCW's adviser, submitted that the PD cost of equity allowance is inconsistent with, and higher than, CMA's own MAR-model cross-check results. MCC[621] and Citizens Advice[622] also stated that the CMA should exclude the 2% expected outperformance from the MAR cross-check calculations: its inclusion is inconsistent with a fair-bet price control.

7.642   Citizens Advice also noted that there is circularity in the MARs analysis as MARs are already driven by expectations of future regulatory returns, and that assuming additional outperformance introduces circularity into the model. Citizens Advice noted that the CMA infers a higher cost of equity from a model that itself embeds higher implied returns from the outperformance assumption.[623]

Our assessment and decision

7.643   In making our assessment of the MARs cross-check, we agree that it is difficult to use MARs to accurately select a point estimate for the cost of equity and there could be a number of drivers for a MAR deviating from 1. However, MARs analysis of the listed water companies may provide useful information about the broad appetite for equity investment in the sector.

7.644   We retain the approach to MARs analysis we deployed in the CMA PR24 PD. In our MARs analysis we consider the three listed water companies (Severn Trent, United Utilities and Pennon), analysing the trend in MARs over time and estimating the MARs inferred cost of equity for November 2025.

7.645   Figure 7.12 below shows the trend over time of the weighted-average[624] MAR premium for the listed water companies. As of November 2025, there was a 13.5% average MAR premium (ie that the listed water companies' enterprise value was 13.5% higher than the RCV). This is above the long-term average (from 1993 to 2025) premium of 10% and the highest premium observed since September 2022. We also consider the shorter-term trends in MARs analysis and note that the

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[620] Southern (2025) Response to CMA PR24 PD, paragraph 7.119.
[621] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p7.
[622] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 34.
[623] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 34.
[624] The weighted average is calculated as the total adjusted EV for the three listed companies divided by the total RCV for the three listed companies.

November average MAR of 13.5% is in line with the average MARs premium over the last 20 years, and slightly below the 10-year average of 16%.

Figure 7.12: Weighted average water sector MAR premium, January 1993 to November 2025
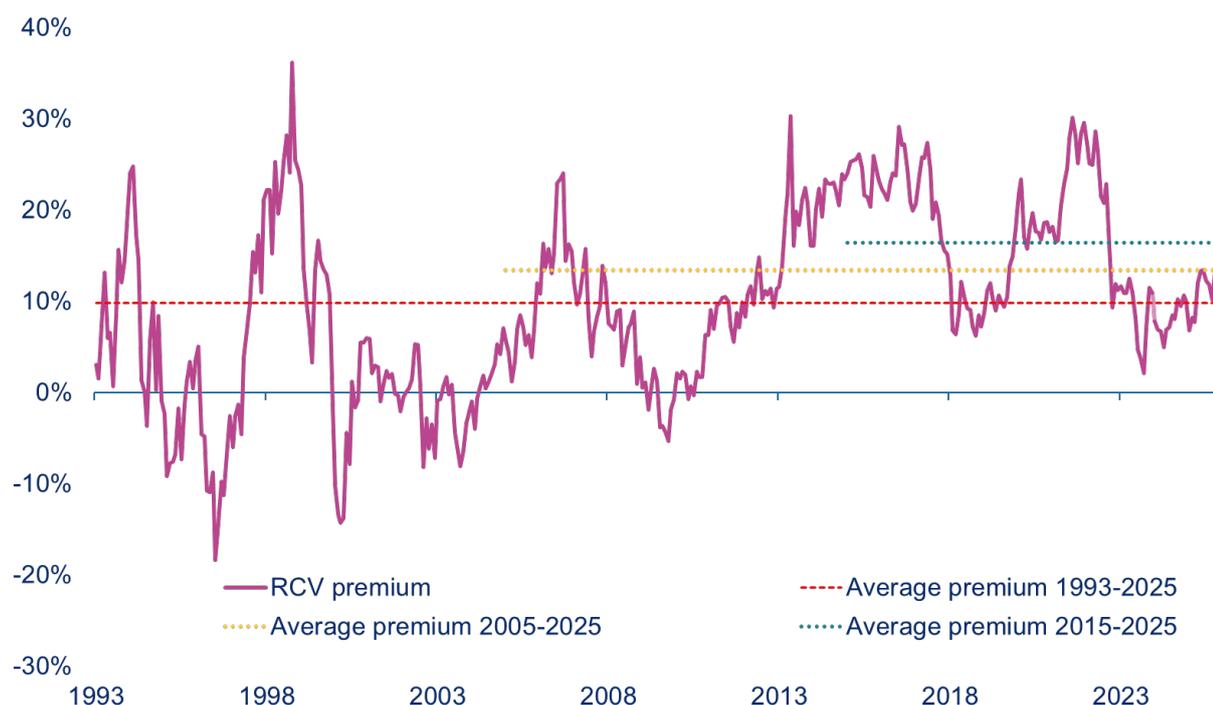
Source: CMA analysis of LSEG Refinitiv data and equity analyst reports

7.646   To infer a cost of equity range from the MARs we use a Dividend Growth Model, adjusting for expected future RoRE performance and real RCV growth. This is the same methodology as used by Ofwat,[625] and adopted by Oxera[626] and KPMG[627] in their reports submitted with the statements of case. We note that Kairos employed an alternative methodology which used a higher, shorter-term assumption on RCV growth and a terminal value after 20 years. Although we recognise that it may be useful to assume differing RCV growth assumptions for the short and longer term, we note there is uncertainty in the estimation of the terminal value in Kairos' analysis and therefore we conclude that Kairos' methodology is not obviously more robust than that employed by Ofwat, Oxera and KPMG.

7.647   Table 7.16 below sets out the assumptions used in our analysis.

[625] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, pp99–104.
[626] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 3.
[627] KPMG (2025) Estimating the Cost of Capital for PR24, section 9.5.

Table 7.16: Assumptions used for MARs analysis (November 2025 data)

	Low scenario	High scenario
Notional gearing	55%	
Discounting horizon	In perpetuity	
Allowed return on equity (CPIH-real)	5.39%	
RoRE performance	0%	2%
Real RCV growth	0%	2%

Source: CMA analysis

7.648   Using November 2025 market data, the inferred cost of equity ranges for each of the listed companies is set out in Table 7.17 below.

Table 7.17: MARs and MARs inferred cost of equity ranges (November 2025 data), CPIH-real

Company	MARs	MARs inferred cost of equity	
		Low scenario	High scenario
United Utilities	1.14	4.1%	6.1%
Severn Trent	1.17	3.9%	5.9%
Pennon	1.03	5.0%	7.0%
Average (simple average)	1.11	4.3%	6.3%

Source: CMA analysis of LSEG Refinitiv data[628] and equity analyst reports[629] provided by Ofwat. Note: the allowed return on equity is based on the mid-point of our estimated range, as shown in Table 7.15 above.

7.649   Our analysis uses daily market capitalisation data. Daily data for the RCV, net debt and non-regulated activities inputs are not available. Therefore, to estimate the inferred MARs cost of equity range, the RCV, net debt and non-regulated activities inputs are estimated using a linear extrapolation from the March 2025 actuals to the forecast position in March 2026.

7.650   We note that an assumption of zero real RCV growth in perpetuity may be conservative, especially in the context of the large investment programmes for PR24, which implies that the inferred cost of equity in the low scenario might be understated. Conversely, perpetual annual RoRE outperformance of 2% is likely to be too optimistic, which implies that the inferred cost of equity in the high scenario might be overstated. Taking these two factors together, a cost of equity range somewhere between the low and the high ends of our inferred MARs range are likely to be more plausible.

7.651   We consider it is pragmatic to retain the zero real RCV growth and the 2% outperformance assumptions to define the bounds of our MAR ranges, even if both of these assumptions might be unrealistic in perpetuity, rather than adjusting our MAR methodology in the way proposed by Northumbrian and MCC/CCW.

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[628] The daily market capitalisation data is sourced from LSEG Refinitiv.
[629] The equity analyst reports include a forecast for net debt, RCV and non-regulated activities as at March 2026 for each of the listed companies. These forecasts, and the March 2025 actuals, are used to calculate a linear extrapolation to estimate MARs consistent with our June data cut-off.

7.652   We note that the MARs implied cost of equity analysis results in a wide range, particularly if the individual company ranges are considered in addition to the averages. However, we observe that our CAPM range sits within the middle of the average MARs implied cost of equity range and therefore we conclude our CAPM cost of equity range is consistent with the observed MARs.

Debt-to-equity premia

7.653   It is a general principle that the risk faced by equity investors, for a given level of gearing, is higher than the risk faced by debt investors. It therefore may be useful to consider the relationship between expected risk premia for debt and equity, and how this has changed over time, to inform our selection of a cost of equity point estimate.

7.654   The company-specific expected risk premium for equity is an output from our CAPM range. There is no widely accepted methodology for estimating the expected debt risk premium. We note that while there are methodologies for estimating the probability of default and the loss in the event of default, estimating the underlying debt risk premium is not without uncertainty or judgement.[630]

7.655   In this section we consider a number of debt-to-equity premia cross checks and comment on their usefulness in informing our selection of a cost of equity point estimate. We note that in this context it is important to consider the debt risk premium on new debt only, to ensure both the debt and equity benchmarks reflect forward-looking expectations of returns.

General points on debt-to-equity premia

7.656   As discussed under 'TMR (ie total market return)' above, Ofwat's methodology assumes that the TMR is relatively stable through time (a 'through the cycle' or 'fixed TMR' approach). The implication of the fixed TMR approach is that the ERP falls when interest rates rise and vice-versa, leading to a relatively stable real cost of equity allowance between regulatory decisions, even when interest rates change. Our approach to TMR adapts the fixed TMR approach by introducing some sensitivity between interest rates and the cost of equity, however, our approach still implies that the debt-to-equity premia will generally fall when interest rates rise and vice-versa.

7.657   Had debt to equity premia analyses been used to cross-check previous water regulatory determinations, such as PR19, when interest rates were very low, it

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[630] Previous analysis by the Competition Commission estimated a separate liquidity premium for corporate debt, to be deducted from the observed yields, implying that there could be other factors which drive a difference between the promised yield and the underlying debt risk premium. Competition Commission (2007), BAA Ltd Report on the economic regulation of the London airports companies (September 2007), Appendix F: Cost of Capital, p26 Table 5.

would have shown a significant difference between the allowed cost of equity and the spot cost of new debt at the time.

Levered cost of equity

Ofwat's PR24 FD approach

7.658   Ofwat noted in the PR24 FD that the premium between the cost of equity and the cost of debt had narrowed over time but that it considered this was consistent with its adoption of a 'fixed TMR' approach which makes the allowed return on equity less sensitive to changes in interest rates, than the allowed cost of debt.[631]

Parties' submissions

Disputing Companies

7.659   Northumbrian stated that the PR24 FD cost of equity provided a premium above the estimate for the cost of new debt of 1.36%, compared to 4.5% by the CMA at PR19. Northumbrian submitted that this highlights that Ofwat's cost of equity is not sufficient to provide equity holders with a reasonable return, when compared with expected returns on related available debt-based investments.[632]

7.660   Southern argued that Ofwat's debt-to-equity premia for AMP8 is smaller than it allowed for previous AMPs, specifically, the spread between Ofwat's allowances for equity and new debt is at its lowest level since at least PR04.[633]

7.661   Anglian welcomed the use of debt-to-equity premia analysis in the CMA PR24 PD. However, Anglian noted that these spreads are overstated, since the assumption of a CPIH-CPI wedge artificially reduces the cost of debt. Anglian added that if this wedge is removed, the PDs point estimate would result in a spread of 164bps, which is too narrow.[634]

Third parties

7.662   MCC, on CCW's behalf, noted that it is a natural consequence of the fixed TMR approach that the gap between debt and equity will narrow when interest rates are higher. MCC also noted that the premium was lower, than it is in the PR24 FD, for the ten-year period between 1995 and 2005.[635]

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[631] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix p64.

[632] Northumbrian SoC, paragraph 585(d).

[633] Southern SoC, p461, paragraph 311.

[634] Anglian (2025) Response to CMA PR24 PD, paragraph 524.

[635] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, paragraphs 69–71.

7.663   Citizens Advice noted that the narrowing of the debt-to-equity premia was a feature of the stable TMR approach. It added that it is not fair or justified to change methodology on TMR estimation or introduce debt-to-equity premium as a cross-check at the point when the expected offset would occur.[636]

Ofwat

7.664   In its response to the Disputing Companies' statements of case, Ofwat noted that it was unaware of any financial theory which posits the need for a minimum wedge between the cost of debt and equity (although Ofwat recognised that new debt should normally carry a lower required return on account of ranking senior to equity in repayment order). Ofwat stated that a reason driving a narrower debt-equity differential may be a higher debt beta, due to the perception that bondholders may be facing a higher share of systematic risk than was previously the case.[637]

Our assessment and decision

7.665   Our initial starting point is that comparing expected returns to debt and equity investors can be a helpful sense check on the allowed return on equity, but one that is not straight forward to interpret.

7.666   Observed data on expected returns to debt investors typically comes in the form of nominal promised yields on long-term bonds. These yields will embed the market expectations of: (i) inflation over the bond tenor; (ii) an inflation risk premium typically required on nominal fixed-rate investments; and (iii) expected loss given default. Traded debt instruments may also attract a liquidity premium compared to listed shares. While we agree that equity investors should reasonably demand a higher return to compensate for higher risk (ie higher variability) of equity returns compared to debt, it is not clear how these various other factors affect this hierarchy of returns. Bearing these uncertainties in mind, we now consider the available evidence.

7.667   There have been changes in the methodology used by Ofwat (and the CMA) to set the allowed cost of new debt over previous water price controls. In the PR24 FD, Ofwat used the iBoxx A/BBB to estimate the cost of new debt, and this was also the basis for the cost of new debt allowance at PR19 implemented by both Ofwat and the CMA. We therefore use the iBoxx A/BBB index as a benchmark for the cost of new debt allowance against which to compare the allowed return on equity. The chart below shows the nominal iBoxx A/BBB index with the allowed cost of

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[636] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 35.
[637] Ofwat (2025) Risk and return – common issues, paragraph 5.148.

equity from decisions in the water sector since PR09 (converted to nominal terms using the inflation assumptions used in the relevant price control decision).

7.668　We note that Kairos included a similar analysis in its report.[638] Kairos presented the allowed return on equity in nominal terms using both official forecasts and swap-based estimates for inflation.[639] We note that using swap-based inflation estimates will result in a higher wedge between the nominal allowed return on equity and the iBoxx A/BBB.

Figure 7.13: Nominal iBoxx A/BBB and cost of equity decisions in water

Source: CMA analysis of iBoxx data and previous Ofwat decisions. Note: CMA PR24 PD shows the mid-point of our CAPM range.

7.669　Figure 7.13 above shows that the difference between the iBoxx A/BBB and the allowed return on equity for Ofwat's PR24 FD was lower than previous price controls set by Ofwat and the CMA.

7.670　The mid-point of our final cost of equity range is 2.0% above the iBoxx A/BBB index, which is lower than the premia in previous water price control decisions. We note that there are limitations to this analysis as, first, it uses the long-term inflation assumption at the time of the price control decision and, second, the notional gearing has changed over time. The decisions shown all had notional gearing above 55% which, all else equal, will increase the allowed return on equity.

7.671　We note that the reduction in the spread between the iBoxx A/BBB and the allowed return on equity is largely due to the 'through the cycle' approach to TMR.

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[638] Kairos (2025) Setting the Allowed Return on Equity for PR24, Figure 4, p70.
[639] Kairos (2025) Setting the Allowed Return on Equity for PR24, Figure 4, p70.

As set out under 'TMR (ie total market return)' above, we have amended the approach to TMR to take account of changes in interest rates, but we would still expect the premia between debt and equity to be lower than previous price controls, due to higher interest rates.

Unlevered cost of equity

7.672 As noted above, the risk faced by equity investors, for a given level of gearing, is higher than the risk faced by debt investors. This principle can be extended further to note that the debt risk premium should not theoretically exceed the ERP for an unlevered firm. This is because, as gearing rises, the debt becomes more like equity, and in the extreme will take on risks similar to those taken by equity investors in an unlevered firm.

7.673 It can therefore be useful to compare the cost of equity for a fully equity financed company (ie an unlevered company) with the cost of debt. For the purposes of this analysis, we consider the forward-looking allowances for debt and equity investors ie the cost of new debt allowance and the allowed return on equity.

7.674 In response to the CMA PR24 PD, in which we used a simple unlevered cost of equity to cost of new debt cross-check, Ofwat and the Disputing Companies provided various comments on our analysis, as set out further below.

Ofwat's PR24 FD approach

7.675 In the PR24 FD, Ofwat set a CPIH-real allowed cost of new debt of 3.74% and a CPIH-real allowed return on equity of 5.10% (based on 55% notional gearing). On an unlevered basis, this equates to an unlevered cost of equity of 3.34% CPIH-real.

Parties' submissions

Disputing Companies

7.676 Anglian stated that the unlevered cost of equity, ie equity return assuming no gearing, and based on solely FD parameters, shows a negative result over the cost of new debt of -0.32%,[640] ie the cost of equity is lower than the cost of new debt. Anglian argued that the PR24 FD is asking investors to receive a lower return for holding greater risk.[641]

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[640] Note Anglian's analysis includes an unlevered cost of equity of 3.42% compared to our estimate of 3.34%. Anglian's estimate is based on analysis from Oxera which calculates the implied asset beta using the mid-point of the RFR, TMR and debt beta ranges. However, for our analysis we estimate the implied asset beta using the top of the Ofwat ranges for all CAPM parameters as Ofwat implicitly used the top of the range for each parameter in its allowed return on equity. Using Oxera's approach results in a higher implied asset beta, and therefore a higher unlevered cost of equity.
[641] Anglian SoC, paragraph 669.

7.677 In response to the CMA PR24 PD, Southern submitted that the debt-to-equity premia cross-check was useful but that there were certain technical shortcomings in its implementation which result in downward bias.[642]

(a) **Tenor:** Southern stated that the PD compared its cost of equity, with a 20-year investment horizon, to a cost of new debt with a 15.4-year tenor. Southern stated that the cost of new debt used in the cross-check should be restated such that it is aligned to the investment horizon in the cost of equity.

(b) **Expected default losses:** Southern noted that the promised yield on debt must be converted to an expected return by deducting expected default losses. Southern submitted that its adviser, KPMG, estimated a conservative default loss adjustment for A/BBB rated corporate issuers of 15bps which should be deducted from the cost of new debt for the purposes of the cross-check.

(c) **Inflation.** Southern stated that the cost of new debt should be calculated using a long-run CPIH assumption of 2.1%, rather than 2.4%.

7.678 Southern concluded that correcting for these points meant that aiming up of 60bps (rather 30bps) was required to maintain the same debt to equity gap as in the PD, assuming the PD CAPM methodology is retained[643]

Ofwat

7.679 Ofwat submitted that our unlevered cost of equity debt to equity cross check should reflect the following factors to aid a like-for-like comparison.[644]

(a) **Inflation swaps.** Ofwat stated that the appropriate deflator to derive the expected CPIH real return from the nominal yield is the CPI swap rate plus 40bps.

(b) **Expected default losses.** Ofwat noted that the cost of new debt is a yield, which requires adjusting for default risk and expected loss given default to be comparable with the allowed return on equity, which is an expected return. Ofwat proposed a 30bps adjustment.

(c) **Benchmark index adjustment.** Ofwat stated an adjustment of no more that 20bps is justified.

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[642] Southern (2025) Response to CMA PR24 PD, paragraphs 7.100-7.102.
[643] Southern (2025) Response to CMA PR24 PD, paragraph 7.103.
[644] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.62. Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.3.1.

(d)   **Higher debt beta.** Ofwat supported a debt beta point estimate of at least 0.2, which would increase the unlevered cost of equity estimate.

Our assessment and decision

7.680   There are several issues we need to consider in conducting a simple unlevered cost of equity to the cost of new debt cross-check. We discuss each of these in turn.

7.681   First, the cost of new debt is a promised yield, and while the default risk on investment grade debt is low, it is not zero. Ofwat, Oxera and Southern proposed making an adjustment for the expected loss on debt between 15 to 30bps. We agree with the Parties that the cost of new debt is a promised yield, however, we consider one of the benefits of this cross-check to be its simplicity. Given the uncertainty over the level of adjustment to be made for the expected default losses, we do not make an adjustment for expected default losses to the cost of new debt used in this cross-check. However, all else equal, not making the adjustment is likely to understate the spread between equity and debt.

7.682   Second, we agree that there is uncertainty around the expected inflation embedded into nominal debt yields. Ofwat submitted that we should use CPI swap data (plus the CPIH-CPI wedge) to deflate the cost of new debt. We observed earlier that swap-based estimates do generally indicate higher expected inflation (accounting for inflation risk premium) than the official forecasts we use to estimate a long-run CPIH assumption. On balance, we consider it is more appropriate to compare the allowed return on equity and the cost of new debt on a basis which is consistent with the inflationary measures used in setting the individual parameters of each. This means using our long-term CPIH assumption of 2.4%. However, to the extent that market-based measures of inflation imply higher inflation, this can also contribute to understating the spread between equity and debt.

7.683   Third, in relation to tenor adjustments, as set out below in our cost of debt section, we have a preference for reliance on unadjusted yields. We note that methods to control for tenor may not accurately control for differences in yield which are solely a result of tenor differences.

7.684   Finally, Ofwat and the Disputing Companies have also suggested adjustments to the calibration of individual cost of debt or CAPM parameters to feed into this cross-check. These include the cost of new debt benchmark adjustment, the CPIH assumption used to deflate the cost of debt allowance and the debt beta. We have considered the arguments relating to the calibration of individual cost of debt and

CAPM parameters in the relevant sections for these parameters. We therefore do not discuss these further here.[645]

7.685   We consider one of the benefits of this cross check to be its simplicity. We note that there are arguments to be made for various adjustments, however, we conclude that the subjective nature of these adjustments does not improve the robustness of our cross-check and therefore propose to retain the methodology set out in the CMA PR24 PD.

7.686   Our final allowed return on equity range is 5.01–5.76% (CPIH-real). This equates to a CPIH-real unlevered return on equity of 3.93–4.04%, with a mid-point of 3.99% (CPIH-real). Our cost of debt analysis results in an allowed cost of new debt of 3.78%, based on a 2.4% CPIH assumption. There is no defined level or required premia between the cost of equity and the cost of debt. While our cost of new debt is below the unlevered cost of equity, the gap is relatively narrow, especially for the cost of equity values in the bottom half of our range.

7.687   Notwithstanding earlier comments that these comparisons are subject to uncertainty, we are mindful that from an investor perspective, looking at headline returns, such a narrow gap might not be sufficiently attractive to bring in record levels of new capital needed into the sector. Therefore, we may want to pick a point estimate above the mid-point of our CAPM range.

ARP-DRP

Introduction

7.688   The asset risk premium to debt risk premium (ARP-DRP) analysis put forward by Oxera on behalf of Anglian provides an alternative to the simple comparison between the unlevered cost of equity and the cost of new debt. Oxera's ARP-DRP analysis sought to estimate a lower bound for the cost of equity by adjusting the cost of debt for gearing through analysing the premia on assets over debt. To estimate the lower bound, Oxera re-levered the cost of debt to estimate the DRP at 100% gearing, ie it assumed the notional company is fully debt financed.[646]

7.689   Oxera estimated the ARP as the asset beta multiplied by the ERP, using the CAPM parameters. It estimated the DRP as the cost of new debt less expected loss less the RFR. In its analysis, Oxera used observed water company bond yields, gilt yields corresponding to the Macaulay duration and an expected loss of 30bps.[647] Oxera noted that the 30bps estimate used annualised default rates

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[645] In relation to Ofwat's argument on debt beta, we noted earlier that the levered cost of equity was not particularly sensitive to the debt beta assumption. However, we recognise that this is not necessarily the case for the unlevered cost of equity, introducing another layer of uncertainty into these cross-checks.
[646] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.3.1.
[647] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.3.1.

based on Feldhütter and Schaefer (2018),[648] and that using Moody's default rates would produce a lower expected loss assumption and a higher DRP.

7.690   Oxera noted that the advantages of the ARP-DRP methodology are that, first, it is neutral to the treatment of inflation, as the risk differential will be the same whether it is derived in nominal, RPI- or CPIH-real terms, and second, other premia in the debt yields are accounted for through the deduction of the expected loss.[649]

7.691   Oxera concluded that its ARP-DRP analysis resulted in a strict lower bound on the cost of equity of at least 6.20% (CPIH-real).[650]

7.692   In response to the CMA PR24 PD, Anglian referenced updated Oxera analysis (using 30 June for cutoff) which showed that the CMA PR24 PD cost of equity of 5.90% was broadly equal to the cost of equity only implied for Severn Trent and United Utilities in Oxera's analysis, and that when using a broader sample of water companies, the implied cost of equity for the notional company was approximately 6.43%.[651]

Linear extrapolation as a minimum bound for the ARP

Parties' submissions

Disputing Companies

7.693   Oxera suggested using the implied DRP at 100% gearing as a minimum bound for the ARP, by assuming a zero DRP at 0% gearing and interpolating between the origin and the DRP at 55%. This is illustrated in Figure 7.14 below. Oxera noted that a linear extrapolation is likely to be an underestimation of the actual risk premium that would be expected for a hypothetically 100% debt-financed company and therefore this calculation provides a tighter and more informative lower bound for the ARP and hence the cost of equity.[652]

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[648] Feldhütter, P, Schaefer, S (2013) The Myth of the Credit Spread Puzzle.
[649] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.3.1.
[650] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.4.
[651] Anglian (2025) Response to CMA PR24 PD, paragraph 537.
[652] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 2.3.1.

Figure 7.14: Oxera submission on the relationship between risk premia and gearing
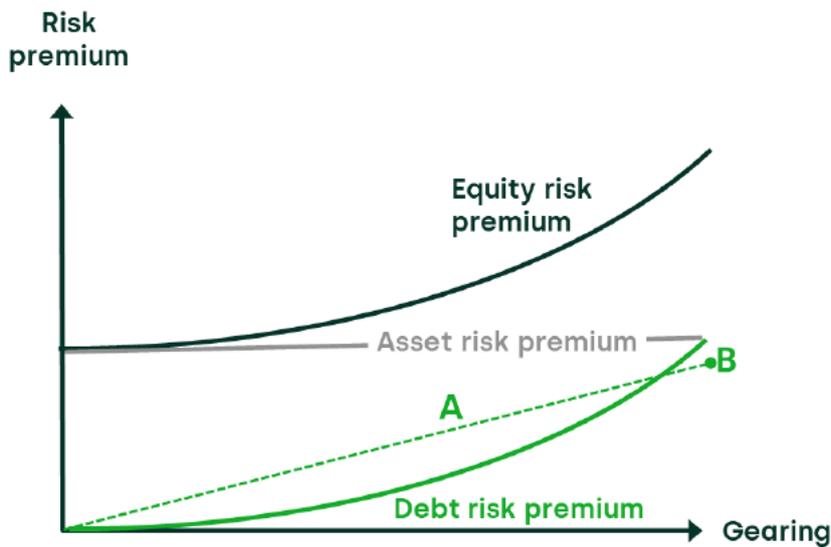
Source: Oxera (2025) PR24 Cross-checks to CAPM estimation, Figure 2.2.

7.694   Anglian stated that Oxera's linear extrapolation presents a conservative picture of the spread, noting that:[653]

(a)   the starting point of the extrapolation (at the origin of the DRP curve) is based on the theoretical fact that when the value of debt is zero, the probability that the value of a company's debt exceeds the value of the company is therefore also zero;

(b)   the DRP curve is adjusted for expected loss; and

(c)   the extrapolation is done on an individual company basis, based on the observed level of gearing and fixed debt yields. As a result, ARP-DRP presented in Anglian's statement of case allows the estimation of an implied cost of equity for each of the eight companies in the sample.

Ofwat

7.695   Ofwat raised other concerns about Oxera's ARP-DRP methodology to derive its assumption for the 100% geared debt risk premium. Ofwat stated that Oxera's methodology estimated the ARP by assuming the observed DRP was at March 2024 gearing. Ofwat noted that this methodology implicitly extrapolated a linear relationship assumed to hold between the DRP at zero gearing and the observed DRP at March 2024 gearing. Ofwat also stated that the analysis implied that the

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[653] Anglian (2025) Response to CMA PR24 PD, paragraph 527.

first tranche of debt issued by the ungeared company has a zero DRP (ie it is priced at the RFR).[654]

Our assessment

7.696   In relation to the linear extrapolation argument, we note that Oxera relies on a single observation (point A in the graph above) to estimate the linear DRP function. This data point is based on water company bond yields less the corresponding gilt yields less 30bps. Point A takes the observed bond yield and gearing at a single point in time. While there is a relationship between bond yields and gearing, it is easy to see how the slope of the linear extrapolation (and therefore the estimated Point B) is quite sensitive to the position of Point A on the graph.

7.697   In addition, as noted by Ofwat it is unlikely that the first tranche of debt for a previously unlevered company will be at issued at close to the RFR. Even when accounting for the adjustment made for the expected loss on debt, the spread between gilt yields and the yield on the first tranche of debt could be higher than 30bps.

7.698   Taken together, these factors imply that the slope of the dotted line can be quite different to the example above, and that the value of point B in the graph is uncertain.

7.699   As set out above in our discussion of the unlevered cost of equity and the cost of new debt, debt-to-equity premia can provide a useful cross-check on the allowed return on equity. We note that Ofwat's academic advisers agreed with this during the Hearings.[655] However, we still consider that Oxera's interpolation to 100% gearing can only provide a directional sense-check on the CAPM cost of equity but it cannot be used as a strict lower bound on the cost of equity.

7.700   In our view, this further shows that estimating the underlying debt risk premium in the observed cost of debt – which is truly comparable to the risk premium in the cost of equity – is subject to significant uncertainty.

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[654] Ofwat (2025) Response to common issues on risk and return, paragraph 5.150.
[655] Professor Mason, Ofwat's academic adviser, stated that 'The latest iteration that Oxera has done really does seem like a material improvement matching up actual water bonds in terms of maturity… So actually the methodology right up to the last step, we have got agreement. It is just whether you take a straight or a weighted average.' (Non-confidential) transcript of the Third Party Hearing for CCW on 23 June 2025, p109, lines 2–15.

Comparator companies used in the analysis

Parties' submissions

Disputing Companies

7.701   Oxera's analysis used observed bond yields from water companies, excluding bonds from Thames Water, Southern, United Utilities and Severn Trent, which it considered to be outliers.

Ofwat

7.702   Ofwat submitted that Oxera's range depends on excluding Severn Trent and United Utilities from its analysis and that if Oxera's approach was used on these companies then it would give a range of 5.03–5.09% (CPIH-real).[656] Ofwat argued that given these companies are the main source of 'pure play' beta data, and carry a stable Moody's rating of Baa1, consistent with the notional company, it would be reasonable for the source of the debt risk premium to use these companies. Ofwat stated that the companies used by Oxera (ie companies other than Severn Trent and United Utilities) should be excluded due to their excessively high debt premium driven by their worse credit rating outlook and higher gearing, that make them a poorer match for the characteristics of the notional company.[657]

Our assessment

7.703   We consider that it is useful to include United Utilities and Severn Trent bonds within the ARP-DRP analysis as they carry Baa1/BBB+ ratings. However, we do not agree with Ofwat that sole weight should be placed on these bonds.

Conclusions on Oxera's ARP-DRP analysis

7.704   The ARP-DRP analysis presented by Oxera is a development of the simple unlevered cost of equity cross-check. As with the unlevered cost of equity cross-check, the ARP-DRP analysis may imply that we should select a point estimate for the allowed return on equity in the upper half of our CAPM range.

7.705   However, as set out above, we have reservations regarding Oxera's interpretation of the ARP-DRP analysis providing a strict lower bound on the allowed return on equity.

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[656] Oxera stated its ARP-DRP methodology is used to inform a strict lower bound for the cost of equity. Ofwat did not specify if this is a strict lower bound or an indicative range for the cost of equity but stated that they used the same approach as Oxera, with different inputs.
[657] Ofwat (2025) Response to common issues on risk and return, paragraph 5.149.

Hybrid bonds

7.706   Hybrid bonds are securities with both debt and equity-like characteristics. Hybrid bonds typically offer periodic payments, like debt. However, they are subordinate to other debt instruments in the capital structure, which means they carry a higher risk of loss in the event of default. Hybrid bonds therefore have a higher yield to compensate for the increased risk.

Parties' submissions

Disputing Companies

7.707   Southern[658] and South East[659] included Frontier Economics' analysis of hybrid bonds as a cross-check to the CAPM cost of equity. The analysis was prepared for the Energy Networks Association in relation to the RIIO-3 price control.

7.708   Frontier Economics analysed the cost of equity implied by hybrid bonds issued by National Grid.[660] Southern stated that Frontier Economics ensured that the analysis was appliable to water companies by showing that (1) the characteristics of National Grid are similar to water companies and (2) a recent quote on a potential hybrid bond issuance by Severn Trent implied similar results to the analysis of National Grid.[661]

7.709   Frontier Economics derived an implied cost of equity of 6.6% CPIH-real by undertaking the following steps.[662]

   (a)   Taking the spread at issue and adjusting this for risk of default.

   (b)   Applying a 50% equity-likeness assumption. Frontier Economics assumed the hybrid bonds had 50% equity-likeness and therefore increased the return.

   (c)   Adding this to the iBoxx Utilities yield to derive an inferred nominal equity return.

   (d)   Deflating the nominal equity return by 2% CPIH to derive a CPIH-real return.

   Ofwat

7.710   In its response to the statements of case, Ofwat noted that it expressed caution on extrapolating the hybrid bond analysis to the water sector. Ofwat stated that:[663]

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[658] Southern SoC, p465, paragraph 324–330.
[659] South East (2025) Response to CMA PR24 PD, paragraph 6.09(a).
[660] Frontier Economics (2024) Updated cost of equity cross-check evidence, Section 2.
[661] Southern SoC, p465, paragraph 329.
[662] Frontier Economics (2024) Updated cost of equity cross-check evidence, Table 1.
[663] Ofwat (2025) Response to common issues on risk and return, paragraph 5.154.

(a) the specific bond upon which the analysis is based is unusual;

(b) from a different sector;

(c) has an annual call schedule from 2025 until maturity; and

(d) appears to be highly illiquid.

Our assessment and decision

7.711 Frontier Economics' analysis uses a single National Grid bond to estimate an implied cost of equity. Frontier Economics' rationale for using the National Grid bond (and not including SSE bonds in its analysis) was that SSE has a greater share of non-regulated activities and therefore may not be as relevant as a cross-check on the regulatory allowed cost of equity.

7.712 The rationale set out in our beta analysis on why we do not think it is appropriate to include National Grid in our comparator set, is also relevant to Frontier Economics' hybrid bond analysis. We note that National Grid has US operations, in addition to its non-regulated activities and UK regulated networks, and therefore, is not directly comparable to a UK regulated water network. We also note the Frontier Economics report submitted by Southern was prepared for the Energy Networks Association and not in relation to the PR24 Business Plan or our redeterminations.

7.713 Frontier Economics' analysis also makes assumptions about the pricing of default risk and the percentage equity-likeness of the hybrid bond. We note that the implied cost of equity from the hybrid bond analysis is highly sensitive to these assumptions, particularly the percentage equity-likeness of the hybrid bond. Frontier Economics performed sensitivities on its hybrid bond analysis resulting in a range for the implied cost of equity of 5.8% to 8.4% CPIH-real.

7.714 Due to the use of a single, non-UK water hybrid bond as the basis for the analysis and the wide range for the implied cost of equity when applying sensitivities, we do not consider this to be a helpful cross-check to select a point estimate for the cost of equity.

Inference analysis

7.715 KPMG's inference analysis is another debt-to-equity premia cross-check. KPMG's analysis estimates an empirical relationship between debt and equity values, recognising that both debt and equity are contingent claims on a firm's assets.

KPMG uses it to infer the required return on equity from the observed debt return.[664]

7.716   We summarise high level points raised by KPMG, the Disputing Companies and Ofwat in relation to inference analysis here. Appendix F sets out the methodology used by KPMG, responses to CMA PR24 PD and a more detailed discussion of technical aspects of the analysis which are in dispute.

Parties' submissions

Disputing Companies

7.717   KPMG noted that a benefit of inference analysis as a cross-check on the CAPM cost of equity is that it is independent of the CAPM and instead derives the expected return on a stock based on the yield on debt, rather than the expected return on the market.[665]

7.718   KPMG submitted that based on the debt pricing at the time and the relationship between debt and equity, the inferred cost of equity range was 6.50% to 6.73% (CPIH real).[666]

Ofwat

7.719   In its response to the statements of case, Ofwat highlighted two key criticisms with KPMG's inference analysis:

(a)   that the excess debt returns are based on index data not company debt costs. Ofwat also raised concerns about the 40bps uplift adjustment applied to the index data;[667] and

(b)   that the elasticity estimates used to infer the cost of equity are based on a regression which has some statistically insignificant coefficients (ie leverage and RFR), with wide confidence intervals.[668]

Our assessment and decision

7.720   We consider that the economic intuition behind inference analysis is sound and draws on a relatively well-established framework in the academic literature.

[664] KPMG (2025) Estimating the Cost of Capital for PR24, section 9.3.
[665] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 9.3.6.
[666] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 9.3.16.
[667] Ofwat (2025) Response to common issues on risk and return, paragraph 5.153.
[668] Ofwat (2025) Response to common issues on risk and return, paragraph 5.152.

7.721   However, there are limitations to KPMG's analysis (which are set out in detail in Appendix F), relating to the following aspects:

(a)   statistical significance of coefficients;

(b)   differences between elasticities for United Utilities and Severn Trent;

(c)   use of an index rather than company specific cost of debt; and

(d)   applicability of the Merton framework to regulated firms.

7.722   Due to the reasons set out above, and in Appendix F, we do not consider that the inference analysis fundamentally adds to the simpler debt-to-equity cross-checks we considered earlier and as such we do not place weight on KPMG's inference analysis when selecting a point estimate for the cost of equity.

Multi-factor models

7.723   The CAPM uses a single risk factor, the market risk factor, whereas multi-factor models (**MFMs**) use additional risk factors to price returns. The Disputing Companies propose the use of the Hou et al q-factor model[669] which incorporates risk factors for size, investment and return on equity in addition to the market risk factor.

Ofwat's PR24 FD approach

7.724   Ofwat did not place weight on MFMs when selecting a point estimate for the cost of equity in its PR24 FD. The Disputing Companies propose using MFMs as a cross-check on the CAPM cost of equity.

Parties' submissions

Disputing Companies

7.725   Northumbrian stated that whilst the CAPM is one model that can be used to estimate the return on equity, it has known flaws in the form of omitted variables and underestimating the cost of equity for low beta stocks (like utilities). Northumbrian noted that academics and investment practitioners have therefore long-since used MFMs either as a primary tool or as a means of triangulating the CAPM cost of equity.[670]

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[669] Hou, K., Xue, C. and Zhang, L (2025) 'Digesting Anomalies: An Investment Approach, 2015', *The Review of Financial Studies,* pp650–705 (Hou et al 2015).
[670] Northumbrian SoC, paragraph 585(c).

7.726   Southern[671] and South East[672] submitted that MFMs have superior power than the CAPM for explaining observed stock returns. Southern also stated that this is because MFMs more completely capture a stock's systematic risk than the CAPM by virtue of their additional factors.

7.727   Kairos, advisers to Northumbrian and Wessex, and KPMG, adviser to Southern and South East, both relied on the academic paper by Tharyan et al (2024), which investigates the performance of MFMs in the UK and tests the CAPM, Fama-French 5 factor (**FF5F**) and Hou et al q-factor models in a UK setting. Kairos noted that the authors found that testing the models over a 44-year period suggests that either the FF5F or the q-factor models have better explanatory power than the CAPM when pricing the cross section of larger UK stock returns.[673]

7.728   Both Kairos and KPMG subsequently estimated an MFM cost of equity for the listed UK water companies under the q-factor model, using the factor and test portfolio data from Tharyan et al (2024).[674]

Ofwat

7.729   In its response to the Disputing Companies' statements of case, Ofwat noted the following concerns with the use of MFMs to set the allowed cost of equity: [675]

(a)   two of the three factor premia (size and profitability) in the model were unstable and individually insignificant;

(b)   there is evidence of instability over time in the additional q-factor premia, which suggest the cost of equity would be volatile over time. Ofwat stated that estimates that vary make the setting of the allowed cost of capital too sensitive to the timing of the regulatory decision; and

(c)   MFMs bring material increase in complexity, particularly how to forecast factor premia and factor betas that may not have a stable long-term average.

Third parties

7.730   MCC Economics, CCW's advisers, stated that it agreed with Ofwat that MFMs do not meet the necessary standard to be given weight in regulatory decision making.[676]

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[671] Southern SoC, p470, paragraph 370.
[672] South East SoC, paragraph 6.27(c).
[673] Kairos (2025) Setting the Allowed Return on Equity for PR24, paragraph 216.
[674] Tharyan et al (2025) An investigation of multi-factor asset pricing models in the UK.
[675] Ofwat (2025) Response to common issues on risk and return, paragraphs 5.159–5.160.
[676] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p25.

Our assessment and decision

7.731   We consider that there are limitations to existing MFM analysis in a regulatory price control context at this stage which mean we do not place weight on MFMs as a cross-check on the CAPM cost of equity.

7.732   As set out in Appendix F: Multi-factor models and inference analysis, we are not aware of any theoretical or empirical work on the q-model for firms in regulated markets. Regulated industries have different characteristics to competitive markets. The economic intuition behind the investment and the profitability factors in the q-model does not obviously apply to regulated firms.

7.733   The q-factor model is based on the assumption that firms will continue to invest as long as the marginal investment has a positive net present value (NPV). However, investment levels for UK water companies are largely determined through the price review process, and revenue and cost allowances are set such that the expected NPV should be close to zero across the investment programme.

7.734   Second, while we welcome the evolution of the academic research on this topic using UK data, we only have a single paper by Tharyan et al, which is still going through peer review.

7.735   Due to the reasons set out above, and in Appendix F, we do not consider that the development of MFMs in the UK is sufficiently advanced to allow us to draw any inference on the appropriate cost of equity for UK water companies. We therefore place no weight on MFMs when selecting a point estimate for the cost of equity.

Top-down cross checks

Infrastructure fund returns

Ofwat's PR24 FD approach

7.736   Ofwat did not include an analysis of infrastructure fund returns in its PR24 FD as a cross-check on the CAPM cost of equity.

Disputing Companies

7.737 Anglian submitted that infrastructure fund IRRs should be considered as a cross check on the allowed cost of equity as water companies are competing for capital with a range of infrastructure investments in other regulated industries.[677]

7.738 Oxera, Anglian's advisers, undertook an analysis of infrastructure fund returns as a cross-check on the CAPM cost of equity. Oxera adopted the methodology used by Ofgem in its RIIO-2 price control process which considered the returns of a range of infrastructure funds and calculated an adjusted discount rate, with an average of 9.02% CPIH real.[678] Oxera noted there were limitations to this analysis due to the differences in risk profiles between regulated water companies and the infrastructure fund portfolios.[679] Oxera undertook further analysis, selecting the two funds with significant holdings in regulated assets, which it submitted were most likely to have risk profiles comparable to water companies. For these two funds, Oxera adjusted the nominal discount rate for the difference between Net Asset Value and share price, the funds' inflation assumption and the funds gearing (to re-lever the cost of equity to the 55% notional gearing level). This provided a range of 7.12 to 7.24%.[680]

7.739 Southern submitted that infrastructure fund IRRs should also be considered to cross check the cost of equity, noting that this is a methodology used by Ofgem.[681] In response to CMA PR24 PD, South East added that there was unambiguous informational value in evidence that investors can currently obtain returns of >10% from listed infrastructure funds and referenced Ofgem's RIIO-3 draft determination.[682]

7.740 KPMG, Southern and South East's advisers, also undertook analysis based on Ofgem's RIIO-2 approach, by adjusting the discount rates for the premium to net asset value (**NAV**) of each fund. KPMG noted that it had excluded outliers due to the wide range of results. To draw inferences to the allowed cost of equity in water, KPMG considered the differences between the median implied IRR and the allowed cost of equity at PR19 and PR24. KPMG noted that the delta had increased from PR19 to PR24 and submitted that this indicated the equity return needed to remain competitive and attract investment in regulated utilities.[683]

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[677] Anglian SoC, paragraph 676.

[678] The adjusted discount rate is calculated as the discount rate multiplied the Net Asset Value by share, divided by the share price.

[679] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 4.

[680] Oxera (2025) PR24 Cross-checks to CAPM estimation, section 4.

[681] Southern SoC, pp465–66, paragraphs 331–336.

[682] South East (2025) Response to CMA PR24 PD, paragraph 6.09(b).

[683] KPMG (2025) Estimating the Cost of Capital for PR24, p99–100, paragraphs 9.4.5 to 9.4.11.

7.741   In the CMA PR24 PD, we noted that that there are significant ranges in the values for infrastructure fund returns submitted by the Disputing Companies and Ofwat, varying from 4.90% (in Ofwat's response to the statements of case) to an average of 9.02% in Oxera's analysis of discount rates used by infrastructure funds. Anglian[684] and Southern[685] submitted that evidence from listed infrastructure funds supported a higher cost of equity. Anglian stated that the width of the range of returns from infrastructure funds in our PD was due to an error in the figures submitted by Ofwat.

7.742   Anglian[686] and Southern[687] added that once correctly adjusted for the share prices of these funds trading at discounts to the NAVs, the implied range for the return on equity is narrowed and provides useful information regarding investor expectations of returns applicable to the UK water sector.

7.743   During the Hearings, the Disputing Companies noted that returns available from other infrastructure assets are used as a reference point by financial institutions when they go through equity and debt raise processes.[688]

Ofwat

7.744   In its response to the Disputing Companies' statements of case, Ofwat replied that not applying a NAV discount lowers Oxera's implied cost of equity range to 4.90%–5.23%.[689] Ofwat also included a figure from a UBS publication of nominal pre-tax returns and noted that Ofwat's PR24 allowed return is the second highest against European peers.[690]

Our assessment and decision

7.745   We note there is a wide range in the values for infrastructure fund returns submitted by the Disputing Companies and Ofwat. We agree with the Disputing Companies that the figures submitted by Ofwat are not representative as they do not adjust for the share prices of these funds trading at discounts to the NAVs.[691]

7.746   However, the infrastructure fund returns submitted by the Disputing Companies include a range of investments, which will have varying risk profiles and therefore varying returns. The differences in risk profiles compared to a UK regulated water network, limit the usefulness of the infrastructure returns as a cross-check on the allowed return on equity for a UK water company. We note that infrastructure fund

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[684] Anglian (2025) Response to CMA PR24 PD, paragraph 525.
[685] Southern (2025) Response to CMA PR24 PD, paragraph 7.113.
[686] Anglian (2025) Response to CMA PR24 PD, paragraph 525.
[687] Southern (2025) Response to CMA PR24 PD, paragraph 7.113.
[688] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, p98, lines 8–23.
[689] Ofwat (2025) Response to common issues on risk and return, p133, paragraph 5.172.
[690] Ofwat (2025) Response to common issues on risk and return, p133, paragraph 5.173.
[691] This is the approach also taken by Ofgem when considering infrastructure fund returns as a cross-check. Ofgem (2020), RIIO-2 DD finance annex, p63.

returns may provide information on the direction within our CAPM range to select but we do not think they are informative in selecting a precise point estimate and therefore do not place weight on this cross-check.

Equity analyst reports

Ofwat's PR24 FD approach

7.747　Equity analyst reports often include an estimate of the allowed return. In the PR24 FD, Ofwat noted that four recent reports[692] included a range between 5.0% and 5.6% which enveloped its 5.1% allowed return on equity estimate.[693]

Parties' submissions

Disputing Companies

7.748　KPMG, Southern and South East's advisers, referenced estimates from Barclays and JP Morgan which could be used for indicative benchmarking purposes and imply a cost of equity range of 5–7% CPIH real. KPMG noted that other analyst reports published after Ofwat's PR24 FD lacked sufficient detail to infer the required cost of equity for the notional company.[694]

7.749　Oxera, Anglian's advisers, submitted that most equity analyst reports comment on their expectations of the cost of equity allowance set by Ofwat, rather than what they deem sufficient to attract equity investment. In addition, Oxera referred to a Deutsche Bank report which cited an expected return on equity for the listed companies that is on average 1% higher than their estimated cost of equity for the sector. Oxera also noted that the three listed companies are the strongest performers in the sector and therefore not reflective of the cost of equity for the sector as a whole, or the notional company.[695]

Ofwat

7.750　In its response to the Disputing Companies' statements of case, Ofwat stated that its survey of equity analysts' expectations of the allowed return at the PR24 FD found a median (3.98%) and mean (4.00%) of return expectations of equity analysts, within a range of 3.81% to 4.14%.[696]

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[692] All dated October or November 2024.
[693] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p69.
[694] KPMG (2025) Estimating the Cost of Capital for PR24, p102, paragraphs 9.5.8–9.5.11.
[695] Oxera (2025) PR24 Cost of equity estimation, pp39–40, section 5.1.
[696] Ofwat (2025) Response to common issues on risk and return, p23, paragraph 1.69.

Our assessment and decision

7.751   The equity analyst and survey estimates submitted by Ofwat and the Disputing Companies cover a wide range from 3.8% to 7% CPIH-real. We do not consider this to be a useful range to inform our selection of a cost of equity point estimate. In addition, we agree with Oxera that the allowed return in equity analyst reports often represent an estimate of the allowed return expected to be set by the regulator, rather than the required return expected by investors. We are therefore of the view that placing weight on cost of equity estimates included with equity analyst reports to select a point estimate for the allowed return on equity could cause a circularity.

Conclusions on cross-checks

7.752   Overall, we have reviewed a large volume of evidence on cross-checks and we find that drawing conclusions from these is difficult, and many of the cross-checks put forward do not shed much light on where in the CAPM range to pick a point estimate. This comes back to our opening remark that this is an area of the WACC estimation which might benefit from a more proportionate approach going forward.

7.753   From the various evidence we considered, we take some comfort from the observation that listed companies are trading at a MAR above one and that our CAPM range is consistent with the indicative cost of equity ranges implied by the MAR analysis.

7.754   We find that the debt-to-equity cross-checks may imply that numbers in the lower half of our CAPM range might be too low to incentivise the record levels of investment needed in this AMP, and this might be a reason to select a point estimate about the midpoint.

7.755   We do not place weight on any of the other cross-check evidence.

Other considerations when selecting a point estimate

Welfare impacts of underinvestment

Ofwat's PR24 FD approach

7.756   In the PR24 FD, Ofwat recognised that the sector needs to raise significant amounts of debt and equity finance in the 2025–30 period, above the levels raised in any previous regulatory period and a significant increase on PR19.[697] Ofwat stated that adopting an allowed equity return above the midpoint of its CAPM range in addition to targeted amendments to the risk and return package will

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[697] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p81.

further support the sector to raise the finance that is necessary to deliver the required investments that will deliver longer-term service improvements to customers and the environment.[698]

Parties' submissions

Disputing Companies

7.757   Northumbrian submitted that the consumer welfare implications of setting the return on equity too low are greater and more wide-reaching than the consumer welfare implications of setting it too high. It is therefore best practice to err on the side of caution and aim-up above the mid-point to reduce the risk of setting the return on equity too low, particularly where there is a large amount of investment required.[699]

7.758   Kairos, Wessex and Northumbrian's advisers, noted that quantifying the consumer harm that arises if the allowed cost of equity is set too low, is challenging. However, Kairos submitted that companies may try and deliver on their commitments whilst spending less by implementing solutions that may cost less in the short-term but more in the long-term.[700]

7.759   KPMG, Southern and South East's advisers, stated that the core principle underpinning aiming up is to mitigate the greater welfare loss arising from underestimation rather than over-estimation of the cost of capital. It added that as the demand for most regulated services is driven by the essential nature of the services provided, the welfare loss from underinvestment is substantial and the detrimental impact on customers is not symmetric when the allowed return deviates significantly from the true cost of capital.[701]

Third Parties

7.760   MCC Economics, CCW's adviser, stated that the CMA did not provide a channel through which aiming up would attract more capital, nor did the PDs provide a cost-benefit analysis of aiming up.[702]

7.761   MCC Economics[703] and Citizens Advice[704] submitted that the CMA assumed that there is an asymmetric welfare impact of underinvestment but does not provide any empirical evidence of it.

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[698] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p81.
[699] Northumbrian SoC, p153, paragraph 585(b).
[700] Kairos (2025) Setting the Allowed Return on Equity for PR24, p77, paragraph 248.
[701] KPMG (2025) Estimating the Cost of Capital for PR24, paragraphs 10.1.1–10.1.2.
[702] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p15.
[703] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p15.
[704] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 36.

7.762   One line of argument, which supports selecting a point estimate for the cost of
equity above the mid-point of the range to minimise the risk of underinvestment
and the potential welfare loss to customers is based on the following reasoning.

(a)   That there is substantial uncertainty over the level of the WACC, as
recognised in the estimated range for the cost of equity.

(b)   It is known that significant amounts of investment are required over this AMP,
and it is likely that there will be a period of sustained high investment for
multiple future AMPs as companies will need to design and invest in an
enhanced capital programme, to meet a growing number of statutory
requirements and to meet the challenges raised by climate change.

(c)   If the WACC is set too low, there is a risk that investors may not be fully
compensated over the lifetime of their investments. While the risk of error in
the WACC might balance out from one price control to another, the overall
remuneration to each set of investors will depend on when they invest in the
sector and when they exit, and at what price. If investors do not feel confident
that they will earn a reasonable return over the life of their investment, they
may be unwilling to invest, to the detriment for customers.

(i)   Current investors do not exit but focus on short-term cash flow gains, by
sweating the assets and pursuing short-term efficiencies, to the long-
term detriment of customers.

(ii)   Investors choose to exit the sector or are unwilling to put in further
capital at the allowed WACC, resulting in a higher cost of capital from
new investors who are willing to put money into the sector. This leads to
higher prices in future price controls; or investment obligations do not
get delivered, if new capital is not secured. Customers are overall worse
off if the investment is not delivered.

7.763   To counterbalance these arguments, regulatory frameworks have other
mechanisms of reducing the risk of under-investment, as noted by the UKRN
guidance, of which the following are of most relevance to the water sector.[705]

(a)   **Statutory requirements**: a significant proportion of the capital programme is
driven by statutory requirements or official planning exercises, as opposed to
purely commercial motivations. Where statutory investment is included in the
price control, failure by regulated companies to fulfil their statutory duties can
result in enforcement action and could ultimately result in them forfeiting

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[705] UKRN (2023) UKRN guidance for regulators on the methodology for setting the cost of capital, p28.

control of the license to operate, which is a powerful incentive against under-investment.

(b) **Service delivery incentives**: regulators increasingly rely on service delivery incentives to reduce the risk of underinvestment (eg in general maintenance, asset health and in circumstances where spend is discretionary). Such incentives may mitigate the risk of underinvestment in existing infrastructure.

(c) **Separate treatment of large one-off projects**: it may be possible to treat new investments separately from existing assets within the price control, where the cost of capital is set by a market exercise. For example, Ofwat is making use of Direct Procurement for Customers (**DPC**), in which water companies seek bids from third parties to design, finance, operate and build new infrastructure.

7.764 We consider that the decision to set a cost of equity above the mid-point is one which needs careful thought, and that aiming up should not be a default position.

7.765 As explained in earlier sections, we consider our parameter ranges to be balanced. As the true WACC is not known, and there are risks from setting the WACC too low which in welfare terms may exceed the costs to customers resulting from aiming up on the cost of equity, the case for aiming up should be properly considered, as a separate step. Ofwat's financeability analysis in its PR24 FD suggested that £12.7 billion of new equity would be required over AMP8.[706] It is not clear that the other mechanisms discussed above are appropriate or sufficient on their own to ensure that this capital is forthcoming and that the risk of under-investment is minimised.

7.766 We note the challenge from CCW and Citizens Advice that we did not provide empirical evidence to support our conclusions on the welfare impacts of underinvestment in the CMA PR24 PD. We consider that quantifying these impacts is inherently difficult, but we are also of the view that the consequences of under-investment are likely to be asymmetric in the water sector. For example, if under-investment increases the risk of serious pollution incidents or prolonged water outages, the costs to customers from these events could be significant and could exceed the direct costs of paying higher bills. These externalities do not have to be large to justify a small difference in the WACC of, say, 0.1%, if that is expected over time to reduce the risk of under-investment.

7.767 We also note that MCC, CCW's advisers, recognise that companies may invest less if the allowed return is too low.[707] This is precisely what the consumer welfare argument is about – reducing the risk of setting the WACC too low and therefore

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[706] Ofwat (2024) Final Determinations Aligning Risk and Return, p6.
[707] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p.22.

reducing the risk of under-investment, which would harm customers in the long run.

7.768   We recognise that there are other tools, including statutory obligations, the increased use of PCDs and a suite of ODIs, which act to mitigate that risk, but we cannot be certain that these tools are sufficient on their own. Firms, acting rationally, will look for opportunities to cut costs during the price control, and if the WACC is set too low, this could put the delivery of key service improvements to customers at risk.

7.769   We conclude that given the relatively unique circumstances of this price control, a degree of aiming up on the cost of equity may overall be beneficial. We take this into account in our overall conclusion on selecting a point estimate below.

Asymmetry in incentives package

Ofwat's PR24 FD approach

7.770   Ofwat updated its assessment of the balance of risk in its PR24 FD following representations to its PR24 DD. In its PR24 FD, Ofwat concluded that there is a slight negative skew to the distribution of outcomes RoRE but there is a positive skew in financing performance, leaving a broadly symmetrical distribution of returns at package level. Ofwat therefore concluded that asymmetry in the incentive package is not a material consideration for choosing a point estimate for the allowed return on equity.[708]

Parties' submissions

Disputing Companies

7.771   Anglian[709] and South East[710] submitted that if the asymmetric risk identified in their statements of case was not addressed then the cost of equity should aim up further to address the downward asymmetry.

7.772   In response to the CMA PR24 PD, Anglian noted that the CMA PR24 PD significantly understated the level of risk in the package (notably arising from the provisional decisions on base, enhancement, ODIs, and reflecting an inflation assumption which includes a 40bps CPIH-CPI wedge) and its implications for the cost of equity. Anglian added that the CMA PR24 FD should aim up to the top of

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[708] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p67.
[709] Anglian SoC, p200, paragraph 767.
[710] South East SoC, p82, paragraph 6.28(b).

the CAPM range to address the residual risk in the package (some of which is effectively impossible to address at source).[711]

Ofwat

7.773   In its response to the statements of case, Ofwat stated that it had calibrated the risk and uncertainty package such that an efficient company with the notional capital structure should have a reasonable prospect of earning the base allowed return. Ofwat noted that the Disputing Companies had not engaged with the evidence that financing performance and inflation bring to the RoRE performance of the notional structure.[712] Ofwat added that any revisions to the risk and return package should be considered at the source of the expected out and under performance, rather than poorly-targeted adjustments to the allowed return on equity.[713]

Third parties

7.774   Citizens Advice submitted that arguments that price control settlements are skewed against companies should be viewed in the context of historical performance. Citizens Advice noted that due to structural advantages the companies have, compared to regulators and those representing consumer interests, it is reasonable to assume that settlements are likely to favour companies.[714]

7.775   MCC Economics, on behalf of CCW, stated that Ofwat had not fully reflected the changes which reduce risk for investors, and had it done so, it could have concluded there is a material prospect of the companies exceeding the regulatory return on equity.[715] Citizens Advice submitted that in our PD we had not reflected our view of lower risk due to increased protections at PR24 in our cost of equity calculation.[716]

Our assessment and decision

7.776   We provide our assessment on the in chapter 8 (Risk and return). We do not repeat our response and reasoning to the various arguments on this issue in this chapter here but we note our conclusion that the overall package is broadly balanced.

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[711] Anglian (2025) Response to CMA PR24 PD, paragraph 536.
[712] Ofwat (2025) Response to common issues on risk and return, p132, paragraph 5.169.
[713] Ofwat (2025) Response to common issues on risk and return, p132, paragraph 5.169.
[714] Citizens Advice (2025) Third party submission on the Water PR24 References, p12.
[715] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p26.
[716] Citizens Advice (2025) Response to CMA PR24 PD, paragraph 40.

7.777   Generally, we are of the view that where possible any arguments around potential skew in the package should be dealt with 'at source' and this is the approach we took in these redeterminations. Aiming off the cost of equity is generally not the best means to address issues around potential skew in the package.

Parameter asymmetry and uncertainty

7.778   The aim of any cost of capital determination is to set a point estimate for the cost of capital, which is then translated directly into returns for investors. We consider that the primary approach to doing so is to use the CAPM in order to estimate the appropriate returns to equity. However, we note that use of this model comes with parameter uncertainty. The CAPM cost of equity is not directly measurable and the parameters are subject to both theoretical debate and statistical uncertainty.

Ofwat's PR24 FD approach

7.779   In its PR24 FD, Ofwat acknowledged that it is appropriate to consider whether the balance of evidence for individual CAPM parameters points to the upper or lower end of the range. Ofwat considered that there was not strong evidence to suggest that its beta, TMR and RFR estimates are downwardly skewed.[717]

Parties' submissions

Disputing Companies

7.780   Kairos, Northumbrian and Wessex's advisers, stated that it considered Ofwat's CAPM cost of equity range to be downwardly biased. Kairos submitted that Ofwat's ranges of the RFR, TMR and beta all included downward bias.[718] Kairos undertook an analysis of the range of CAPM cost of equity results using different estimates from its RFR, TMR and beta ranges. From this analysis, Kairos concluded that its CAPM cost of equity estimate is unlikely to be materially biased in either direction.[719]

7.781   KPMG, Southern and South East's advisers, undertook an analysis of whether each cost of equity parameter in Ofwat's PF24 FD methodology reflected the balance of available evidence. KPMG concluded that Ofwat's cost of equity methodology does not appear to reflect a balanced consideration of evidence, which could increase the risk that allowed returns are not sufficient to attract equity capital across AMP8.[720]

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[717] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p68.
[718] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp75–76, paragraph 243.
[719] Kairos (2025) Setting the Allowed Return on Equity for PR24, p75, paragraph 242.
[720] KPMG (2025) Assessing the balance of evidence in PR24 FD CoE estimates, p7.

7.782 In addition, Kairos,[721] KPMG[722] and Oxera,[723] Anglian's advisers, all made points regarding the asymmetry in Ofwat's estimation of the individual CAPM parameters. These arguments are similar to those we have set out in the sections for each individual parameter, and we therefore do not repeat them here.

Ofwat

7.783 In its response to the statements of case, Ofwat stated that it did not consider it necessary to quantify aiming up in terms of an overall cost of equity distribution, and to do so would place too much confidence in the ability to correctly determine the distributional properties of CAPM components.[724]

7.784 Ofwat stated that it had concerns that the midpoint of our PD TMR and unlevered beta ranges were not balanced, due to the combination of novel, insufficiently tested approaches.[725] Ofwat submitted that this raised the prospect that the overall amount of aiming up in our PD was effectively far higher than the 30bps presented, which may risk overcompensating investors.[726]

Our assessment and decision

7.785 We consider that the arguments raised by Kairos, KPMG and Ofwat are largely criticisms of the underlying methodology used to derive the various parameters. While it is possible to construct a probability distribution around the CAPM range, to reflect the uncertainty in the beta and TMR estimates, we do not think that this is necessary to help us choose a point estimate.

7.786 We consider our estimates of the ranges for individual CAPM parameters to be broadly balanced around the midpoint of the range, and that the range is sufficiently wide to reflect the underlying parameter uncertainty in a regulatory context. While statistically speaking, we recognise that there is some probability that the true cost of equity is outside our CAPM range, a range that is too wide in a regulatory context is not helpful and can reduce the predictability of regulatory decisions.

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[721] Kairos (2025) Setting the Allowed Return on Equity for PR24, pp74–76, section 5.3.
[722] KPMG (2025) Estimating the Cost of Capital for PR24, p104, paragraphs 10.1.1.
[723] Oxera (2025) PR24 Cost of equity estimation, pp40–41, section 5.2.1.
[724] Ofwat (2025) Response to common issues on risk and return, p132, paragraph 5.167.
[725] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.55.
[726] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 4.60.

Financeability

Ofwat's PR24 FD approach

7.787　At PR24 FD, Ofwat did not consider notional financeability considerations to be a direct constraint on the allowed return on equity as the financeability assessment is primarily a test of the cashflow headroom in its determinations. However, it did consider that the higher allowed return on equity adequately supports efficiently run companies to secure financeability.[727]

Parties' submissions

Disputing Companies

7.788　Anglian submitted that an assessment of debt financeability over the next five AMPs demonstrates that the notional company will need to attract more equity in the future to maintain its key rating agency credit metrics.[728]

7.789　South East stated that the assessment of financeability acts as a valuable cross-check on a CAPM cost of equity calculation.[729]

7.790　Southern stated that our PD approach to not consider debt financeability as a cross-check for the allowed return on equity was a significant departure from the CMA PR19 FD where debt financeability was the only cross-check. Southern added that debt financeability is the most direct real-world test of whether the regulatory settlement allows the notional company continued access to capital markets.[730]

Our assessment and decision

7.791　We do not agree with Southern's submission that debt financeability was the only cross check used by the CMA at PR19. At PR19, the CMA also considered potential asymmetry in the framework and the risk of underinvestment when selecting its cost of equity point estimate.[731]

7.792　In setting our determinations for the five Disputing Companies we have undertaken a notional financeability assessment for each company. Our analysis is set out under 'Financeability' in chapter 8 (Risk and return), and shows that in the base case our final determinations are broadly consistent with a Baa1/BBB+

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[727] Ofwat (2025) Final Determinations: Aligning risk and return – allowed return appendix, p83.
[728] Anglian SoC, p201, paragraph 771.
[729] South East SoC, p81, paragraph 6.27(b).
[730] Southern (2025) Response to CMA PR24 PD, paragraph 7.114.
[731] CMA (2021) PR19 Final Report, pp1094–1097.

rating for all Disputing Companies. In addition, we note that there are multiple levers which can be used to address notional financeability concerns.

7.793   We therefore retain our provisional approach to not consider financeability as a direct cross check when selecting a point estimate for the allowed return on equity.

Our decision on selecting a point estimate

7.794   We have estimated a balanced cost of equity range through estimation of individual CAPM parameters drawing on latest market data and established methodologies. As noted by Mason, Robertson and Wright in response to our PR24 PD (see paragraph 7.393) selecting a cost of equity point estimate requires regulatory judgement. In addition to the CAPM, we have considered a range of market-based cross-checks and other considerations to estimate the cost of equity.

7.795   We received no sufficiently persuasive evidence that the suggested alternative cross-checks provide a materially more accurate picture of the cost of equity than the CAPM. We therefore consider the cross-checks upon which we place weight as supporting evidence, to select a point estimate within our CAPM range, rather than primary methodologies for deriving the cost of equity and acknowledge that each approach has pros and cons.

7.796   We conclude that we will place weight on the following market cross-checks when selecting a point estimate:

(a)   MARs; and

(b)   debt to equity premia.

7.797   As set out above, the cost of equity range, 4.3% to 6.3% CPIH-real, inferred by the MARs analysis envelops our CAPM cost of equity range, 5.02% to 5.76%. We therefore conclude our CAPM cost of equity range is consistent with the observed MARs.

7.798   Our analysis of the unlevered cost of equity and the cost of new debt suggests that the implied difference between the cost of new debt allowance to the mid-point of the unlevered cost of equity range may be too narrow to incentivise equity investment and therefore we may want to pick a point estimate above the mid-point of our CAPM range to ensure there is a sufficient debt to equity premium.

7.799   In terms of other considerations, we also take account of the potential welfare implications of underinvestment. We conclude that in the unique circumstances of this AMP a modest degree of aiming up can overall benefit customers. This is because it might reduce the risk of the sector under-delivering on its large-scale

capital programme needed to deliver improvements in service and resilience. A successful delivery of the capital programme is ultimately in customer interests.

7.800   We conclude that it is appropriate to select an estimate for the cost of equity above the mid-point of the CAPM range.

7.801   The consumer welfare arguments on balance support a modest degree of aiming up, which implies picking a point estimate between the mid-point and the top end of our CAPM range. However, when combined with the evidence on the debt-to-equity cross-checks and the narrowing of our CAPM range since the CMA PR24 PD, we conclude that aiming up of around 30bps, as in the PD, is still required.

7.802   Our final decision is to set an allowed return on equity of 5.70%,[732] equivalent to 30bps above the mid-point of our CAPM range as shown in the table below.

Table 7.18: CMA's final determination cost of equity estimates compared to Ofwat's PR24

CPIH-real	*Ofwat PR24 final determination*	*CMA Low*	*CMA High*	*CMA final determination*
Notional gearing	55.00%	55.00%	55.00%	55.00%
RFR	1.52%	2.40%	2.40%	2.40%
TMR	6.83%	6.70%	7.20%	6.95%
ERP	5.31%	4.30%	4.80%	4.55%
Unlevered beta	0.28	0.276	0.314	0.295
Debt beta	0.10	0.150	0.050	0.100
Listed comparator gearing	52.29%	53.94%	56.53%	55.24%
Asset beta	0.33	0.36	0.34	0.35
Re-levered equity beta	0.62	0.61	0.70	0.66
Cost of equity (mid-point)	**4.83%**			**5.39%**
Aiming up	0.28%			0.30%
Cost of equity Appointee	**5.10%**	**5.02%**	**5.76%**	**5.70%**

Source: CMA analysis and Ofwat's PR24 FD. Note: we round the cost of equity point estimate to one decimal point. Similarly, Ofwat's numbers may not add up due to rounding.

Allowed return on debt

Introduction

7.803   The cost of debt estimate reflects the likely costs of debt financing over the price control period, with four components:

(a)   the cost of embedded (ie existing) debt, which reflects interest costs paid over the price control period associated with debt raised in previous periods;

(b)   the cost of new debt, ie interest costs associated with debt raised during the price control period;

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[732] Rounded to one decimal place.

(c)   the share of new debt, an estimate of the relative weights of embedded and new debt over the price control period; and

(d)   an allowance for additional, non-interest costs associated with raising debt, such as issuance and liquidity costs.

Cost of embedded debt

Summary

7.804   We set a real cost of embedded debt of 2.38%. This is based on a nominal cost of debt of 4.84% and a long-term CPIH assumption of 2.4%. Our cost of embedded debt estimate is balance-sheet led. We adopt the same approach as in the CMA PR24 PD and continue to rely on both 'all in' and 'actual-notional' estimates, and we adopt the same instrument 'inclusion criteria' as Ofwat to construct these estimates (ie excluding non-cross currency swaps). Our CPIH assumption is based on the OBR's long-term CPIH forecast.

Introduction

7.805   The cost of embedded debt allowance compensates for interest costs on debt already held (ie embedded) at the start of the price control period, and expected to remain for at least part of the FY25 – FY30 period.

7.806   In this section, we set out our views on the methodology used by Ofwat in its PR24 FD, and Disputing Companies' and Ofwat's submissions. We then provide our final determination estimate for the cost of embedded debt.

Ofwat's PR24 FD approach

7.807   Ofwat's PR24 FD approach was largely consistent with its final methodology, as set out in December 2022.[733] Ofwat took a 'balance sheet-led' approach to its estimation of the cost of embedded debt, meaning that its estimate was primarily based on an average of actual debt costs across the sector.[734]

7.808   This estimate was supported by an 'index-led' cross check, primarily using historical data from its benchmark index (ie the average of the iBoxx non-financial 10+ A and BBB indices).[735] In a change following its PR24 DD, Ofwat no longer set this cross check as an 'upper limit' to the allowance for embedded debt, citing

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[733] Ofwat (2022) Our Final methodology for PR24, Appendix 11- Allowed return on capital, pp59–71.

[734] This is as compared to an 'index-led' approach, approximating efficient debt costs using – for example – an external index reflecting average debt costs. To create its balance sheet led estimates, Ofwat used Annual Performance Report (APR) Table 4.1 data, as provided by companies to its September 2024 data cut-off, as well as companies' projected debt issuance to March 2025. See Ofwat (2025) final determinations Aligning Risk and Return – allowed return appendix, p86.

[735] Ofwat (2025) Final Determinations: Aligning Risk and Return – allowed return appendix, p93.

current market dynamics and a need to remunerate reasonable debt costs to support investor sentiment.[736]

'All in' and 'actual notional' balance sheet-led estimates

7.809   Ofwat's balance sheet-led estimates placed weight on two types of benchmarks, largely sourced from water companies' financial data to September 2024, with companies' projected debt issuances being used beyond this cut-off to March 2025:

(a)   'all-in' debt costs, estimated using instruments in the proportions held by companies (provided these met Ofwat's inclusion criteria, which we set out below); and

(b)   'actual-notional' cost, focused exclusively on companies' index-linked and fixed rate instruments, in the proportions defined in the notional structure (ie 33% index-linked and 67% fixed-rate).

7.810   Ofwat's 'all-in' estimate used a range of debt instruments in the balance sheets of all WaSCs and large WoCs (eg bonds, bank loans, finance leases), provided that debt instruments met Ofwat's inclusion criteria.[737] In general – in determining the inclusion or exclusion of instrument types – Ofwat considered (i) the extent to which financing instruments were sufficiently debt-like in nature, and (ii) if debt-like, whether such instruments were likely to be used by the notional company achieving the target Baa1/BBB+ credit rating.[738] Table 7.19 sets out the instruments included in the balance sheet estimates, and Ofwat's rationale for inclusion or exclusion.

[736] Ofwat (2025) Final Determinations: Aligning Risk and Return – allowed return appendix, p93.
[737] Ofwat (2022) Our Final methodology for PR24, Appendix 11- Allowed return on capital, Table 4.1 and related discussion, pp61–69.
[738] Ofwat (2022) Our Final methodology for PR24, Appendix 11- Allowed return on capital, Table 4.1 and related discussion, pp61–69.

Table 7.19: Inclusion criteria for embedded debt balance sheet estimates

Instrument	Included	Ofwat rationale
Bond, loan, debenture, private placement	Yes	Standard instruments with clearly debt-like characteristics.
Finance lease	Yes	Effectively a secured loan.
Debenture stock	No	Typically has equity-like characteristics.
Preference shares	No	Hybrid instrument which may be more debt or equity-like.
Intercompany loan/ Holdco debt	No	Typically has equity-like characteristics.
Liquidity facility/ overdraft/ RCF	No	Cost accounted for in issuance and liquidity allowance.
Junior/ subordinated debt	No	Low-ranking repayment priority may result in sub-investment grade credit rating Typically associated with highly geared structures; not relevant to a notionally-geared company.
Interest rate and inflation swaps	No	Lacking in debt-like characteristics Issuance may reflect actual structure considerations. Not necessary for the purpose of understanding underlying debt costs. Not included in previous price reviews.

Source: Ofwat (2022): Final methodology for PR24, *Appendix 11- Allowed return on capital, Table 4.1 and related discussion, pp61–69; Ofwat (2024) PR24-FD-RR02-Cost-of-debt.xlsx, sheet 'Inputs'.*

7.811   In its PR24 FD, Ofwat maintained the view from its final methodology on the exclusion of non-cross currency swaps,[739] that:[740]

(a)   while recognising swaps can be used to synthetically replicate debt instruments in the proportions held by the notional company (eg to issue index-linked debt (**ILD**)), they are also used for functions not intrinsically linked to debt financing (ie risk management), making them less relevant for the notional company; and

(b)   swaps can create new risk exposures as well as insulating companies from existing risks. Additionally, the benefits of swaps accrue to shareholders in the first instance who would otherwise fully absorb the risk being hedged against. This may be seen as a 'de-risking of equity' at cost, and Ofwat disputed the fairness of requiring customers to fund both this cost and the allowed return on equity, unchanged for a risk reduction.

7.812   Ofwat's 'actual-notional' estimate was calculated using an adjustment to its 'all-in' estimates. It was estimated for each company by applying a 67% weighting to total embedded fixed-rate debt costs, and a 33% weighting to embedded ILD.[741] The median for all WaSCs and large WoCs (South East and Affinity) was calculated to provide Ofwat's 'actual-notional' estimate.[742]

7.813   The mean of the 'all-in' and 'actual-notional' estimates (ie effectively placing weight of 50% on each) produced a nominal estimate, at the time of the PR24 FD, of

[739] Ofwat (2025) fFinal determinations: Aligning Risk and Return – allowed return appendix, p90
[740] Ofwat (2022) Our Final methodology for PR24, Appendix 11- Allowed return on capital, pp62–63.
[741] Ofwat (2025) fFinal determinations: Aligning Risk and Return – allowed return appendix, p90.
[742] Ofwat (2025) fFinal determinations: Aligning Risk and Return – allowed return appendix, p91.

4.82%.[743] Deflating using Ofwat's 2.0% long-term CPIH estimate, produced a real estimate of **2.77%**.[744]

Parties' submissions

Disputing Companies

7.814   Many aspects of the core methodology used by Ofwat were not in dispute. This included, in particular, the focus on balance-sheet led estimates rather than an alternative index-led approach (used in previous price controls). Disputing Companies' submissions primarily focussed on: (i) the exclusion of non-cross currency swaps from the balance sheet assessment; (ii) the use of the 'actual-notional' estimate; and (iii) following publication of the CMA PR24 PD, the request for 'headroom' in the allowance for floating rate debt. Southern also proposed a cost sharing mechanism on the cost of embedded debt.

7.815   Northumbrian submitted that while it had some concerns with methodology, it did not seek to materially challenge the allowance for the cost of embedded debt over the PR24 period.[745]

Inclusion of non-cross currency swaps, use of 'actual notional' estimates

7.816   Anglian,[746] Southern[747] and South East[748] reflected or referred to arguments set out in in two reports prepared on their behalf by KPMG accompanying (i) their statements of case and (ii) responses to the CMA PR24 PD.[749] To a lesser extent Wessex[750] reflected arguments from the first report accompanying statements of case. KPMG's key proposed adjustments to Ofwat's approaches were:

(a)   **Including non-cross currency swaps** in the balance-sheet assessment, (which added 11bps to its cost of embedded debt allowance compared to Ofwat's estimate).[751] KPMG submitted that a number of water companies have used interest rate swaps to proxy the notional company's debt issuance profile, which is not directly achievable in other ways.[752] Similarly, in respect of inflation swaps, KPMG submitted that these have been used to efficiently

[743] Ofwat (2025) final determinations: Aligning Risk and Return – allowed return appendix, p92.
[744] Ofwat (2025) final determinations: Aligning Risk and Return – allowed return appendix, p93.
[745] Northumbrian SoC, p149.
[746] Anglian SoC, pp201–203; Anglian (2025) Response to CMA PR24 PD, paragraph 568.
[747] Southern SoC, pp479–483; Southern (2025) Response to CMA PR24 PD, paragraphs 7.43–7.47.
[748] South East SoC, paragraph 6.33; South East (2025) Response to CMA PR24 PD, paragraphs 6.37–6.38.
[749] One report was provided to accompany Disputing Companies' SoCs (KPMG (2025) Estimating the Cost of Capital for PR24, pp111–139, section 11.), the second accompanied Disputing Companies' responses to the CMA PR24 PD (KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp17–21, section 4).
[750] Wessex SoC, p90, paragraph 10.12(e).
[751] KPMG (2025) Estimating the Cost of Capital for PR24, p16, paragraph 2.9.3; KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp17–21, section 4
[752] KPMG (2025) Estimating the Cost of Capital for PR24, p115, paragraphs 11.1.40–11.1.46.

create synthetic ILD (eg to proxy the notional structure), and that use of swaps is often the most efficient way to raise ILD.[753] More broadly, KPMG argued that risky use of swaps is uncommon, and presented previous commentary from Ofwat and other regulators recognising that the use of swaps can be expected to form part of debt financing and treasury management strategy.[754] KPMG discussed its view that the exclusion of non-cross currency swaps ignores the counterfactual: ie considering only the underlying debt instrument (rather than a 'synthetic issue' involving an underlying instrument and a swap) implies a retrospective change to treasury policies, and assumes that companies would have issued the same conventional debt without change were the use of swaps unavailable to them;[755]

(b) **Attaching no weight to the estimate of 'actual-notional' costs**, and only recognising an 'all-in' balance sheet estimate (which added 6bps to its cost of embedded debt allowance compared to Ofwat's estimate).

(i) In its initial report accompanying Disputing Companies' statements of case, KPMG submitted that the use of the 'actual-notional' framework 'double notionalises' the balance sheet, by first 'sanitis[ing]' it to remove instruments not considered to be sufficiently representative of the notional company (to produce the 'all-in' estimate), and subsequently 'superimpos[ing]' the notional fixed to ILD mix.[756] KPMG further submitted that the methodology is simplistic, and adjusts the weighted average timing of debt issuance. Here, KPMG suggested that – in general – companies tend to issue ILD in a higher interest rate environment, and fixed-rate debt in a lower interest rate environment. Applying a 67% weighting to fixed-rate debt therefore assumed – in KPMG's view – that 67% of a company's debt was raised in a low interest rate environment;[757]

(ii) Subsequently, following the CMA PR24 PD, KPMG submitted that it is necessary to assume that floating rate debt (omitted from the 'actual-notional' estimate) forms part of the notional company's debt book.[758] It referenced (i) previous commentary from Ofgem, and floating rate debt's inclusion in Ofgem's cost of debt calibration, and (ii) the CMA PR24 PD's proxies for beta (United Utilities, Severn Trent, and Pennon) having all used floating rate debt in the recent past.[759] KPMG also extended its analysis to demonstrate that the 'actual-notional' estimate

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[753] KPMG (2025) Estimating the Cost of Capital for PR24, pp116–118, paragraphs 11.1.47–11.1.61.
[754] KPMG (2025) Estimating the Cost of Capital for PR24, pp119–121, paragraphs 11.1.65–11.1.83.
[755] KPMG (2025) Estimating the Cost of Capital for PR24, pp121–122, paragraphs 11.1.84–11.1.90.
[756] KPMG (2025) Estimating the Cost of Capital for PR24, p113, paragraphs 11.1.14–11.1.16.
[757] KPMG (2025) Estimating the Cost of Capital for PR24, p114, paragraphs 11.1.22–11.1.34.
[758] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination pp17–18, paragraphs 4.1.4–4.1.6
[759] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp17–18, paragraphs 4.1.4–4.1.5.

alters timing of issuance. Here, it considered that the outstanding 'industry wide debt book' demonstrated that most ILD was raised before 2010, in a period characterised by relatively high interest rates.[760] As in previous submissions, KPMG further submitted that the 'all-in' cost already represents a notionalised cost, given that (i) it excludes several instruments that Ofwat considers would not have been issued by the notional company (eg non-cross currency swaps, junior debt), and (ii) it is constructed using a sector median, meaning it abstracts from the 'all-in' cost of any individual company and reduces the influence of outliers; and

(c) **Including 'headroom' in the allowance for changes to floating interest rates**. In response to the CMA PR24 PD, KPMG submitted that the sector median company should be able to recover its 'all-in' cost under a range of plausible downside macroeconomic scenarios. It referenced Ofgem's RIIO-2 final and RIIO-3 draft decisions, in which allowances were set to align with forecast average efficient costs under sensitivity scenarios.[761]

7.817 KPMG's original work resulted in an estimate for the nominal cost of embedded debt of 4.99%[762] (updated to 4.94**%** – using a June 2025 cut-off, no longer including non-cross currency swaps and including 'headroom' – in its subsequent report).[763] This compares to our CMA PR24 PD nominal estimate of 4.84% and Ofwat's PR24 FD estimate of 4.82%.

Potential for cost sharing

7.818 In its statement of case, Southern argued that – given the embedded debt allowance is based on a sector average – it structurally over- and under- funds companies compared to actual cost.[764] Southern submitted that much of a company's embedded debt cost is as a result of factors outside of its control eg dependent on the interest rate environments at the time of issuance, with timing of issuance generally driven by point-in-time needs for capex and debt refinancing (over which companies have relatively little control).[765] Southern submitted that cost sharing would recognise that some companies are effectively 'over-funded' by the embedded debt allowance whereas others are 'under-funded'.[766]

7.819 Southern therefore proposed – in its statement of case – a cost sharing mechanism for the embedded debt allowance, with out- or under- performance to

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[760] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp18–19, paragraphs 4.1.7–4.1.11.
[761] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p20, paragraphs 4.2.1–4.2.3.
[762] KPMG (2025) Estimating the Cost of Capital for PR24, p112, paragraph 11.1.2.
[763] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p21, paragraph 4.3.3.
[764] Southern SoC, p483, paragraph 453.
[765] Southern SoC, pp483–84, paragraphs 456–461.
[766] Southern SoC, p485, paragraph 465.

be shared between companies.[767] Southern submitted that a sharing rate of 75:75 could be applied on an ex-ante basis. Southern submitted that its actual nominal cost of embedded debt is 6.04% compared to KPMG's industry estimate of 5.00%. Southern proposed that applying the 75:75 risk sharing factor (with out- and underperformance shared across companies) would imply its cost of debt allowance would be 5.26% in nominal terms (or 3.20% in CPIH terms using KPMG's 2% long-term CPIH assumption).[768]

7.820 Following our CMA PR24 PD, Southern placed less emphasis on this request.[769] It submitted that – should the CMA continue to 'dismiss' company-level sharing – it should at the very least ensure the sector average allowance is properly calibrated.[770] That is, Southern submitted, no weight should be placed on the 'actual-notional' estimate, and headroom should be provided against plausible macroeconomic scenarios (submissions summarised at 7.816 above).[771]

Ofwat

Inclusion of swaps

7.821 In response to the Disputing Companies' submissions in their statements of case, Ofwat submitted that non-cross currency swaps should continue to be excluded from the calculation of the cost of debt. This was given that – in Ofwat's view – these are not relevant to a company with the notional structure.[772] Ofwat submitted that this is a continuation of a policy that it (and other regulators) has applied in the past for the purposes of setting a regulatory determination,[773] and discussed that companies use swaps for a range of reasons which relate to their own treasury (ie not strictly debt financing) policies.[774] Ofwat also submitted that:[775]

(a) the use of swaps had – at times – been associated with companies managing short-term challenges under their 'actual' financial structures. Ofwat submitted that 'kick the can' swaps, which could be used to improve short-term cashflow ratios, may result in significant and high risk liabilities;

(b) incorporating swaps in the cost of embedded debt assessment would complicate the assessment, requiring a detailed understanding of each swap instrument to make a judgement about how relevant costs could be included in the estimation of embedded debt costs; and

[767] Southern SoC, p483, section 3.4.3.
[768] Southern SoC, p483, section 3.4.3.
[769] Southern (2025) Response to CMA PR24 PD, paragraph 7.48.
[770] Southern (2025) Response to CMA PR24 PD, paragraph 7.48.
[771] Southern (2025) Response to CMA PR24 PD, paragraph 7.48.
[772] Ofwat (2025) Response to common issues on risk and return, p61, paragraph 4.17.
[773] Ofwat (2025) Response to common issues on risk and return, pp59–61, paragraphs 4.14–4.17.
[774] Ofwat (2025) Response to common issues on risk and return, pp59–61, paragraphs 4.14–4.17.
[775] Ofwat (2025) Response to common issues on risk and return, pp59–61, paragraphs 4.14–4.17.

(c) at a sector-level, the inclusion of swaps made little difference to the overall estimate, having slight upward and downward impacts for different companies. Ofwat showed larger positive increases in costs for Yorkshire Water and Southern if swaps were included, and noted that these companies had made use of risky (ie 'kick the can') swap arrangements historically.

Use of the 'actual notional' estimate

7.822   Ofwat submitted that the 'actual notional' approach was introduced by the CMA in the PR19 Final Report, and Ofwat had subsequently adopted it as part of its PR24 methodology.[776]

7.823   Concerning the difference in outputs between the 'all in' and 'actual-notional' benchmarks, Ofwat set out that this may reduce depending on movements in interest rates used to estimate floating rate debt costs.[777] Ofwat set out that, for example, a reduction in the Bank of England base rate to 3.75% may reduce the difference between 'all in' and 'actual-notional' costs from approximately 13bps to 6bps.[778]

7.824   Following publication of the CMA PR24 PD, Ofwat submitted that it supported the CMA's approach in including an 'actual-notional' benchmark in addition to the 'all-in' benchmark.[779]

Company specific circumstances (ie cost sharing)

7.825   Responding to both Southern's cost sharing proposal and South East's request for a company specific adjustment (considered separately under the section titled Company specific adjustment below), Ofwat extended its analysis of its index-led cross check to include increases in each company's RCV since privatisation.[780] It found that this cross check produced an estimate below its cost of debt allowance for the industry as a whole, and for each Disputing Company.[781] It submitted that this did not suggest company specific examination of the details of when funding was required to increase the RCV was required.[782]

Index-led estimates

7.826   In response to the CMA PR24 PD, in which the estimate was solely based on balance-sheet led estimates, Ofwat submitted that the CMA should reconsider the

[776] Ofwat (2025) Response to common issues on risk and return, p58, paragraph 4.11.
[777] Ofwat (2025) Response to common issues on risk and return, pp58–59, paragraph 4.12.
[778] Ofwat (2025) Response to common issues on risk and return, pp58–59, paragraph 4.12.
[779] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p34, paragraph 5.2.
[780] Ofwat (2025) Response to common issues on risk and return, p61, paragraphs 4.18–4.20, Table 4.2.
[781] Ofwat (2025) Response to common issues on risk and return, p61, paragraphs 4.18–4.20, Table 4.2.
[782] Ofwat (2025) Response to common issues on risk and return, p61, paragraph 4.20.

weight to place on the index-led approach.[783] It referred to its most recent report on monitoring financial resilience, and told us that it has concerns or potential concerns about the long-term financial resilience of many companies in the industry.[784] It told us that a balance sheet-led approach – even after inclusion of the 'actual notional' estimate – may therefore compensate companies for higher risks associated with individual company financing choices.[785]

Third parties

7.827   CCW commissioned a report by MCC Economics to review Ofwat's PR24 FD. This argued that an index-led approach should dominate the cost of embedded debt estimate, or at the very least set a maximum value.[786]

7.828   In its report, MCC Economics discussed that financial resilience factors (eg high gearing and financial distress) of a number of water companies were likely to have contributed to a recent 'spike' in debt costs. MCC Economics expressed concern that significant reliance on 'actual' debt costs of water companies may risk embedding the consequences of aggressive structuring decisions into the price control framework.[787]

7.829   In response to our CMA PR24 PD, CCW commissioned a second report by MCC Economics which proposed the following changes to the methodology for setting the cost of embedded debt:[788]

(a)   using notionally efficient (not actual company) debt volumes and costs;

(b)   filtering out 'expensive' debt (ie from highly geared companies);

(c)   using updated data (eg late 2025/ early 2026); and

(d)   reducing the RPI assumption in the embedded debt model (ie from 2.9% to 2.5%).

Our assessment and decision

7.830   We continue to base our estimate on a balance sheet-led (rather than index-led) approach, in line with recent practice in this sector, with an index-led cross check. We make adjustments to better enable the estimate to reflect efficient debt costs of notionally structured companies. This includes (i) excluding non-cross currency

[783] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p35, paragraphs 5.3–5.5.
[784] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p35, paragraphs 5.3–5.5.
[785] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p35, paragraphs 5.3–5.5.
[786] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p11, paragraph 31.
[787] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, p12, paragraph 34.
[788] MCC Economics (2025) A review of CMA's PR24 Provisional Determinations, p25.

swaps from balance sheet estimates, and (ii) including an 'actual-notional' benchmark, in addition to the 'all in' benchmark. We make no 'headroom' allowance for changes in interest rates for floating rate debt.

Inclusion or exclusion of non-cross currency swaps

7.831   As set out in our CMA PR24 PD, we consider that the use of inflation and interest rate swaps can be part of a measured financing and treasury management strategy, including allowing companies to raise 'synthetic' debt to better enable target debt mixes (eg raise ILD in a less well established primary market). However, this does not necessitate the inclusion of swaps in the estimation of the cost of embedded debt using the balance sheet approach.

7.832   We recognise that some derivative exposures have contributed to riskier financing structures. Ofwat – in its response to the Disputing Companies' statements of case – highlighted the particular derivative exposures of Southern and Yorkshire Water.[789] Similarly Fitch – in its ratings assessments – removes its generic sector-level uplift in its credit opinions for [✂] on the basis that mark-to-market derivative liabilities have exceeded 10% of RCV.[790]

7.833   UKRN guidance sets out that, typically, regulators have not reflected the impacts of derivative exposures in the cost of debt allowance.[791] This is primarily – it says – because the function of swaps is around treasury risk management rather than financing investment, and the allowed return is intended to compensate only the latter.[792] We similarly consider that – to the extent that additional downside risk or upside benefits are created by the use of swaps for treasury risk management – these should impact shareholders (ie impact achieved equity returns), rather than customers, as would be the case if they were reflected in the embedded debt allowance.

7.834   We continue to find that sector average proportions of index-linked and fixed rate debt, on a pre-swap basis,[793] are broadly comparable to that of the notional structure.

7.835   Table 7.20 sets out the proportions of the total debt held in the industry, as measured and used in the embedded debt model, following our updates for debt issuances since Ofwat's September 2024 data cut-off. This suggests that – at a sector average level, which is the basis of the 'all-in' allowance – the industry's debt mix is broadly similar to the notional debt mix. This means that the inclusion

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[789] Ofwat (2025) Response to common issues on risk and return, pp60–61, paragraphs 4.15–4.17.
[790] Fitch (2025) UK Water in AMP8: navigating challenges, p4.
[791] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p32.
[792] UKRN (2023) Guidance for regulators on the methodology for setting the cost of capital, p32.
[793] ie excluding the impact of non-cross currency swaps.

of swaps is not required – at a sector average level – to achieve a debt mix close to the notional structure.

Table 7.20: Fixed, index-linked, and floating rate debt proportions used to calculate 'all in' and 'actual notional' costs following updates to March 2025

	WaSCs and large WoCs	Total industry	Notional assumption
Proportion of fixed rate debt	59%	58%	67%
Proportion of index-linked debt	33%	34%	33%
Proportion of floating rate debt	8%	8%	-
Total			**100%**

Source: CMA analysis of Ofwat embedded debt model, updated for debt issuances from 30 September 2024 to 31 March 2025.

7.836   We also consider that the inclusion of swaps would require an understanding of each instrument to determine its risk profile and form a judgement on its suitability for inclusion. We find that this additional complexity would not be outweighed by sufficient benefit to the accuracy of estimated embedded debt costs, and – given information asymmetries between the regulator and water companies – could inadvertently encourage or remunerate riskier financing choices.

7.837   While we recognise that the use of swaps can be a part of legitimate financing and treasury management strategy, we find that the use of swaps is associated primarily with treasury management, and additional risks and benefits should impact shareholders (ie equity returns) rather than customers in the embedded debt allowance. We therefore continue to adopt estimates which exclude the impact of non-cross currency swaps in our final determination allowance.

Treatment of 'all in' and 'actual notional' estimates

7.838   We continue to place weight on both 'all in' and 'actual notional' approaches to estimate the cost of embedded debt:

(a)   our 'all in' estimate is constructed using fixed, floating and index linked debt costs in proportions held by companies, provided instruments meet inclusion criteria (set out at Table 7.19); and

(b)   our 'actual notional' estimate is constructed using these costs, in the proportions defined in the notional structure (ie 67% fixed rate and 33% index linked).

7.839   Considering the submission that it is necessary to include floating rate debt in the notional structure (supporting KPMG's argument that only the 'all in' estimate should be relied on): the notional structure (ie 55% gearing, with 33% of debt being index-linked and the remainder fixed rate), has been established throughout Ofwat's PR24 process. We consider that a late-stage change to this notional

structure (such as introducing floating rate debt, including the question of in which proportion) would require significant and compelling new evidence. As set out earlier – at an industry wide level – embedded debt book proportions broadly align with the notional structure, which supports it remaining as has been signalled for some time.

7.840   With respect to the submission that the 'actual notional' estimate alters timing of issuance: we continue to consider that KPMG's assessment – that companies are likely to issue fixed rate debt in low-interest rate environments and ILD in high-interest rate environments – is likely to be a simplified characterisation. Choices on whether to raise fixed rate debt or ILD will depend on a range of company specific strategies and factors, including individual company expectations of (unknowable) likely future changes in rate environment. With reference to KPMG's extended analysis of the industry's outstanding debt book as compared to changes in the benchmark index over time, we consider that the all-in and actual-notional allowances are already sufficiently 'time weighted'. This is because allowances reflect the actual costs of various fixed-rate and index-linked instruments raised at actual points in time over a long (20+ year) historic period.

7.841   In considering arguments that the 'all in' cost is already sufficiently 'notionalised': we continue to consider that it is important to both (i) make adjustments to exclude financing instruments which are insufficiently debt-like or are associated with riskier financing strategies, and (ii) include an 'actual notional' estimate. The combination of these approaches aid in ensuring that remunerating 'actual' debt costs is consistent with customers funding efficiently incurred, notional-like costs. This is particularly relevant in the context of the index-led cross check currently producing a lower estimate of efficient costs as compared to balance sheet-led approaches (see section Index led cross check below).

7.842   We therefore continue to adopt an estimate which draws on both the 'all-in' and 'actual-notional' approaches (effectively placing weight of 50% on each).

Potential for headroom in the allowance for changes to floating interest rates

7.843   This issue was raised for the first time in response to our CMA PR24 PD. We are not aware of any request for 'headroom' in the allowance during Ofwat's PR24 process (ie in methodology development, the PR24 DD process, or the PR24 FD).

7.844   Regulators in different sectors may use different methodologies to conclude on the appropriate cost of debt allowance. Ofgem's RIIO-3 overall cost of debt is set using a different methodology, with the core allowances for gas and electricity sectors refreshed throughout the price control, including a calibration adjustment which is calculated based on pooled total sector debt instrument forecast cost, rather than company-by-company embedded debt averages as is the case here.

7.845   In the context of our methodology, we do not consider it appropriate to provide 'headroom' for future movements in floating rate debt which could have upside or downside (ie could feasibly benefit shareholders), and which would therefore alter the appropriate risk allocation between customers and shareholders. We therefore make no allowance for 'headroom' on floating rate debt in the 'all-in' estimate.

Potential for cost sharing

7.846   As set out in the CMA PR24 PD, we acknowledge that cost sharing is a common feature of regulatory policy and that in principle embedded debt costs could be a candidate for cost sharing. However, we also note that it is a long-standing policy to set an industry-wide fixed cost of embedded debt allowance (for large companies) and we are not aware of any discussion of cost sharing on embedded debt costs in the PR24 methodology development. While Southern's request is presented as a form of cost sharing, it is effectively a request for higher cost companies like Southern to be set a higher cost of debt allowance.

7.847   We continue to consider that this would be a relatively major departure from the established methodology used to set the allowed return on debt and would imply a change in the current risk allocation between shareholders and customers (or shareholders of other companies). Southern submitted that this does not reallocate new risks to customers but rather reallocated risks across companies.[794] We do not agree – cost sharing would transfer some of the risk of the companies' financing decisions onto customers, and it is not clear that this is appropriate.

7.848   We acknowledge that timing of issuance – itself driven by capex and refinancing needs at any given point-in-time – can significantly impact an individual company's embedded debt costs. However, the use of broad sector-wide averages, incorporating a wide range of instruments with different characteristics (including dates of issuance), mitigates this at the sector level when setting the allowance.

7.849   We also consider that a move closer to a company-specific allowance may dampen the incentives to raise debt efficiently. Timing-of-issuance is driven by capex and refinancing needs, but also individual company decisions on financing structure (eg whether to fund financing needs with debt or equity). Risks (ie out or underperformance) associated with individual company financing choices are to be borne by company shareholders, rather than customers or shareholders of other companies in the sector. This is because individual companies (and their own shareholders) are best placed to take the financing choices that influence these risks, as compared to customers or shareholders of other companies.

7.850   Informed by our view that broad sector averages sufficiently incorporate and remunerate a range of debt issuance profiles, and that individual financing choices

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[794] Southern SoC, p485, paragraph 467.

which may influence out or underperformance are to be carried by companies rather than customers or the broader sector, we have not introduced a cost sharing mechanism for the allowance for embedded debt.

Updated estimates using the balance sheet approach

7.851   Following the methodology set out above (ie continuing to exclude non-cross currency swaps, and continuing to place weight on the 'actual notional' framework), we present our updated estimate. As in the CMA PR24 PD, we update the estimate of the cost of embedded debt to account for actual debt issuances since Ofwat's September 2024 data cut-off to 31 March 2025, using July 2025 (ie for the year ended 31 March 2025) APR submissions.[795]

7.852   In doing this, we have updated Ofwat's model only for relevant issuances from its 30 September 2024 cut-off date to 31 March 2025. Parties did not raise any issues with this approach in response to the CMA PR24 PD.

7.853   Table 7.21 shows the 'all in' and 'actual notional' estimates for all water companies, which remain unchanged from the CMA PR24 PD.[796]

Table 7.21: 2025–2030 estimated debt costs for water companies, informing the 'all in' and 'actual notional' estimates

	Company	'All-in' (nominal)	'Actual notional' (nominal)
WaSCs	Anglian	5.03%	5.02%
	Northumbrian	4.77%	4.80%
	South West Water	5.43%	5.39%
	Southern	5.43%	5.52%
	Severn Trent	4.41%	4.35%
	Thames Water	4.86%	4.79%
	United Utilities	4.46%	4.13%
	Dŵr Cymru	4.89%	4.71%
	Wessex	5.25%	5.25%
	Yorkshire Water	4.81%	4.80%
WoCs	Affinity	4.42%	4.54%
	South East	5.31%	4.50%

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[795] Ofwat used company forecast issuances, assuming instruments were issued at the cost of new debt, for this six-month period. Updated APR data became available in July 2025. Our update is consistent with Ofwat's approach, which effectively used a data 'cut-off' of March 2025. We make a mechanistic addition to Ofwat's embedded debt model by incorporating qualifying new additions to the 'Actuals' sheet of this model.

[796] In response to our CMA PR24 PD, KPMG proposed adjustments to our model to: (1) remove the floating rate adjustment, which adjusts for movements in floating rate benchmarks since March 2024, for instruments that use March 2025 data, and (2) update rates to reflect KPMG's cut-off date, June 2025, for floating rates. KPMG submitted that this reduces the 'all-in' estimate by 1bp. In respect of (1) we found that making this adjustment impacts a small number of instruments and makes no difference to the cost of embedded debt allowance. In respect of (2), we consider it appropriate to use March 2025 data for the embedded debt allowance, as this represents the opening position for embedded debt at the start of the price control. We have therefore made no adjustment to our model.

7.854 Table 7.22 shows sector average benchmarks for WaSCs and large WoCs, in line with the methodology set out.

Table 7.22: 2025–2030 updated estimated debt costs (nominal and CPIH)

	WaSCs and Large WoCs	
	Nominal	CPIH
Company average ('All in')	4.92%	2.46%
Company average ('Actual-notional')	4.82%	2.36%
Company median ('All in')	4.88%	2.42%
Company median ('Actual-notional')	4.79%	2.34%
Mean of means	4.87%	2.41%
Mean of medians	4.84%	2.38%

7.855 We have updated Ofwat's cost of embedded debt analysis for:

(a) actual (rather than forecast) issuances since Ofwat's September 2024 cut-off to 31 March 2025;

(b) updates to the Bank of England base rate, and SONIA reference rates for floating rate debt to March 2025; and

(c) inflation estimates to convert the cost of ILD to nominal figures, using 2.0% for CPI inflation, and 2.90% for RPI inflation, for CPI- and RPI-linked embedded debt respectively (the majority of non-RPI index-linked embedded debt is linked to CPI).

7.856 We take the mean of the 'all-in' median cost of 4.88% (compared to Ofwat's estimate of 4.89%) and the 'actual-notional' median cost of 4.79% (compared to Ofwat's estimate of 4.76%), which produces a nominal estimate for the cost of embedded debt of 4.84% (compared to Ofwat's estimate of 4.82%). Deflating using our long-term 2.4% CPIH assumption (see the section titled Inflation and estimating the cost of capital in real terms), this results in an estimate for the cost of embedded debt of **2.38%** (CPIH, real). This compares to Ofwat's estimate, using a 2.0% CPIH assumption, of 2.77%.

Index led cross check

7.857 Throughout the PR24 methodology development the balance-sheet led approach has been the preferred approach. However, we show the results of the index-led approach, to sense check our 'balance-sheet' led estimates.

7.858 In Table 7.23, we have extended the analysis of Ofwat's index-led cross check to include data for the benchmark index to March 2025 (as compared to the September 2024 cut-off used by Ofwat).

Table 7.23 : Index-led cross checks for the embedded debt allowance

Approach	Length of trailing average	
	15 years	20 years
Simple trailing average	4.08%	4.59%
Uniform collapsing trailing average	3.91%	4.45%
Weighted collapsing trailing average	3.88%	4.57%

Source: CMA extension of analysis of Ofwat index-led cross check

7.859   To two decimal places, the results of this cross check remain the same as at Ofwat's PR24 FD, with upper estimates below our nominal allowance.

7.860   The cross-check gives us confidence that our 'balance-sheet' led approach is unlikely to under-fund companies for efficiently incurred debt costs, as there is noticeable headroom against all the benchmark cross-checks. This further supports our decisions not to implement the various methodology changes proposed by the Disputing Companies.

7.861   We recognise concerns raised by CCW (and MCC Economics on their behalf) around high gearing and companies' financial resilience, and note the submission that the index-led approach should set a maximum value.

7.862   However, we also do not treat this cross check as an upper limit. The current estimate takes steps to reduce the risk of funding inefficient cost. It (i) excludes instruments which represent issuances unlikely to be associated with the notional company achieving the target credit rating (eg we exclude subordinated debt) and (ii) includes the 'actual-notional' estimate which aligns the estimate with the fixed to index-linked proportions of the notional company. These adjustments aim to filter out 'expensive' debt and align the estimate with the notional structure, as submitted by MCC Economics.

7.863   We are also mindful of the risk of under-funding legitimate costs, and acknowledge that index-led benchmarks are inevitably a simplification of a notionally efficient financing strategy. Given that actual debt costs have formed part of the assessment of the cost of embedded debt in this sector over multiple price reviews,[797] we maintain this approach in this decision.

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[797] CMA (2021) PR19 Final Report, Table 3.1, p883.

Conclusion

7.864 We set a nominal cost of embedded debt allowance of **4.84%**. Using our long-term CPIH assumption of 2.4%, this results in a real estimate of debt of **2.38%** (CPIH, real).

Cost of new debt

Summary

7.865 We set a real cost of new debt allowance of 3.78%. We use a one-month average of the benchmark index (the average of the iBoxx A/BBB 10+ non-financial indices) to estimate the nominal cost of debt. We find that a +30bps adjustment to the benchmark index remains appropriate. We use the 2.4% long-term CPIH assumption to derive the real cost of new debt.

Introduction

7.866 New debt is raised over the price control period, primarily to finance growth in RCV and to refinance maturing debt balances. In this section, we assess Ofwat's approach in its PR24 FD and Disputing Companies' submissions, before setting out our assessment and decisions.

Ofwat's PR24 FD approach

7.867 Ofwat's cost of new debt estimate was determined using:[798]

(a) a one-month trailing average of both of the A and BBB-rated iBoxx GBP non-financials 10+ indices (the average of these two indices forms the 'benchmark index'), to its 30 September 2024 data cut-off;[799] and

(b) the addition of a +30bps positive adjustment to this benchmark index (the 'benchmark adjustment'). This adjustment reflected an assessment of primary bond issuances and secondary market yields, which demonstrated that – at the time of the PR24 FD – water company bonds holding the target Baa1/BBB+ credit rating traded at a premium to the benchmark index.

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[798] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, pp95–98.
[799] '10+' in this context means that the bonds contained in the indices have a tenor of more than 10 years.

7.868   The length of the trailing average was determined to be consistent with that used for the RFR.[800] The benchmark index was chosen in line with principles set out in Ofwat's final methodology.[801]

7.869   The cost of new debt estimate was subject to an end-of-period reconciliation at PR29, calculated with a cost of new debt reconciliation model, to reflect movements in the benchmark index over the price control period.[802]

7.870   To assess its +30bps adjustment, Ofwat considered:[803]

(a)   a broad, general assessment of yield-at-issue of all fixed-rate, GBP issuances with tenor more than 10 years in the water sector, to its 30 September 2024 data cut-off, as compared to the benchmark index.[804] Ofwat noted that company issuances were below the benchmark index until November 2022 and after this date issuances had been more aligned to or above the benchmark index, before increasing in more recent months to its data cut-off date. This was the 'primary issuance analysis'; and

(b)   a more detailed analysis of secondary market yields of Baa1/BBB+ rated bonds contained within the benchmark index, as compared to the benchmark index, for the six months from March 2024 to September 2024. This was the 'secondary market analysis'.

7.871   Ofwat placed more weight on its secondary market analysis – given the ability to isolate performance of water company bonds held in the benchmark index with notional-like credit ratings – to determine its upwards benchmark adjustment. It assessed that, over the six months to its September data cut-off, these bonds traded at an average premium to the benchmark index of +24bps. Informed by considerations of the need to raise significant finance to support investment over the price control period, including in international debt markets, Ofwat provided for a benchmark adjustment of +30bps in the cost of new debt allowance.[805]

7.872   In its PR24 FD, Ofwat noted uncertainty as to whether yield spreads to the benchmark index would persist over the price control period.[806] Ofwat suggested the possibility of indexation of the benchmark adjustment, but determined this

[800] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, pp94, 98.
[801] ie that it is transparent, authoritative, independent, similar to the notional company, and sufficiently large (to avoid being skewed by characteristics of specific bonds). For more information see: Ofwat (2022) Our final methodology for PR24: Appendix 11 – Allowed return on capital, p72 onwards.
[802] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, p98.
[803] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, pp96–97.
[804] The benchmark index comprises GBP-issued non-financial sector bonds with tenor of over 10 years.
[805] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, pp97–98.
[806] Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, p98.

would be a late-stage change and would be accompanied by implementation challenges.[807]

7.873   Ofwat deflated the nominal one-month trailing average of the benchmark index for September 2024 using its long-term CPIH assumption of 2.0%.[808]

Parties' submissions

Disputing Companies

7.874   Several core components of the cost of new debt estimation were not in dispute, including (i) the choice of benchmark index, (ii) the choice of averaging period, and (iii) the indexation mechanism.

7.875   Northumbrian submitted that it did not seek to materially challenge the allowances for the cost of new debt over the PR24 period, but requested that the CMA update the estimate (ie the benchmark index average) for latest market data.[809] Wessex did not make any specific comments with respect to the cost of new debt methodology.[810]

7.876   In their statements of case, submissions from Anglian,[811] South East[812] and Southern[813] referred to a report prepared for them by KPMG,[814] which focused on the benchmark adjustment and the analysis which underpins this. Following our CMA PR24 PD, submissions from Anglian[815] and Southern[816] reflected or referred to a second KPMG report.[817] We discuss the core arguments of each report in turn.

KPMG's first report, accompanying statements of case

7.877   KPMG's earlier report argued that we should consider a higher benchmark adjustment (with a point estimate of +40bps) on the basis that:[818]

(a)   updated yield at issuance (primary markets) analysis from November 2022 – January 2025 supported a positive adjustment to the benchmark of +46bps. Here, it compared yield-at-issue of a range of water company bonds to

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[807] ie analysis at the end of the price control period to assess yield premia to the benchmark, to inform a reconciliation similar to that used with the benchmark index. See Ofwat (2025) PR24 final determinations: Aligning Risk and Return – allowed return appendix, p98.
[808] Ofwat (2025) PR24 final determinations: Aligning Risk and Return – allowed return appendix, p98.
[809] Northumbrian SoC, p149.
[810] Wessex SoC, p90, paragraph 10.12(e).
[811] Anglian SoC, p203, section 3.2.
[812] South East SoC, p84, paragraph 6.39.
[813] Southern SoC, p488, paragraph 486.
[814] KPMG (2025) Estimating the Cost of Capital for PR24, p122–128, section 11.2.
[815] Anglian (2025) Response to CMA PR24 PD, pp204–205, paragraph 567
[816] Southern (2025) Response to CMA PR24 PD, pp140–141, paragraphs 7.49–7.59.
[817] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, section 5.
[818] KPMG (2025) Estimating the Cost of Capital for PR24, p122–128, section 11.2.

hypothetically constructed iBoxx A and BBB yield curves, adjusting for tenor and rating of instruments, from 1 November 2022 to 31 January 2025 (its cut-off date);[819]

(b) evidence from the secondary market trends, which it submitted supported an adjustment of around 33bps. Here, it adjusted Ofwat's methodology by (i) controlling both the yields of traded bonds and the iBoxx benchmark for tenor, using what are known as G-spread estimates,[820] and (ii) shortening the averaging period to one month (compared to 6 months in Ofwat's PR24 FD), citing volatility in water company bond spreads; and

(c) the notional company would be unlikely to achieve and maintain the target credit rating of Baa1/BBB+ across all three major ratings agencies (given arguments discussed in relation to financeability, see the section titled 'Financeability' in chapter 8 (Risk and return)). KPMG therefore extended its tenor-adjusted secondary market analysis to assess Yorkshire Water bonds (rated at the time as Baa2 by Moody's but BBB+ by Fitch and S&P). KPMG's analysis suggested a yield, as at January 2025, approximately 59bps higher than the benchmark index.

KPMG's second report, accompanying responses to the CMA PR24 PD

7.878 KPMG's second report continued to focus on considerations of the appropriate benchmark adjustment. KPMG's key proposed changes to the CMA PR24 PD methodology were as follows.[821]

(a) **Controlling for tenor.** KPMG submitted that controlling for tenor anchors the cost of new debt to the tenor of the benchmark index, and had a material impact. Here, KPMG submitted the following.

(i) Recent (shorter tenor) issuances reflected temporary market conditions. Companies had recently issued at shorter tenors than the benchmark index in order to stay within the cost of new debt allowance over the previous price control period, which did not reflect a material benchmark adjustment now requested. A relatively 'steep' yield curve together with a relatively volatile interest rate environment had also incentivised companies to issue shorter dated debt (avoiding locking-in elevated

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[819] To implement this, separate hypothetical yield curves were constructed for each of the iBoxx A and BBB non-financial indices. These used a broader range of indices tracking bond portfolios with a range of tenors (ie the 1-3 year index, 3-5 years, 5-7 years, 7-10 years, 10+ years and 15+ years), to create an estimate of yields at each integer tenor. Bonds of a particular credit rating were then compared to either the A or BBB simulated yield curve at their tenor.
[820] To assess the G-spread of a given corporate bond with a given maturity date, yields of government bonds with similar maturity dates (slightly before and slightly after the corporate bond) are sourced. The slope of the straight line between these two government bond yields at different maturity dates is assessed to estimate the theoretical government bond yield at the maturity date of the corporate bond under assessment (known as 'linear interpolation'). The difference between (i) the corporate bond's yield (ii) the constructed government bond yield, is the corporate bond's G-spread.
[821] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp22–29, paragraphs 5.0.1– 5.4.7

interest rates and allowing companies to later refinance when debt markets had settled).

(ii) Controlling for tenor ensures a consistent horizon across the WACC methodology. The tenor of the benchmark index is close to the sector's investment horizon, and controlling analysis of the benchmark adjustment for tenor ensures that the cost of debt – like the cost of equity – reflects the investment horizon.

(b) **Using primary market data as starting point, with a longer look-back period.**

(i) KPMG submitted primary markets analysis should form the starting point for the benchmark adjustment, including because it reflects the actual cost at which companies raise new debt, with secondary market data used as a cross-check.

(ii) It also presented tenor-controlled analysis of primary issuances since 1 November 2022, stating that a longer look-back period increases the sample size and the general trend/ averages have been relatively stable over this period.

(c) **In respect of secondary market analysis**

(i) Adjusting analysis for a 'new issue premium'. Here, KPMG submitted that primary issuance yields include a premium over traded yields, incentivising investor participation in newly issued bonds. KPMG estimated this to be +10bps.

(ii) Controlling for tenor, with KPMG submitting this is particularly important for secondary markets analysis. KPMG used data which had been adjusted for (1) the spread between traded yields on Baa1 water bonds in the secondary market compared to the yield on tenor-matched gilts; and (2) the spread between the yield on iBoxx A/BBB 10Y+ compared to the yield on tenor-matched gilts. KPMG submitted that it was particularly important to control for tenor in secondary markets analysis, given – it submitted – the assessed yields of traded bonds reflected the remaining tenor, rather than tenor-at-issue, of these bonds.

(iii) Using a one month averaging period. KPMG submitted that the starting point for this analysis should be a 1-month average as this is the best predictor of the future. It highlighted read across to the averaging periods of the RFR, cost of new debt, and floating rate inputs to the cost of embedded debt.

7.879 KPMG recommended a benchmark adjustment in the range of +42-49bps, with a point estimate of +45bps. This was on the basis of tenor-controlled primary markets analysis implying a benchmark adjustment of +49bps, which KPMG submitted was supported by secondary markets analysis implying a benchmark adjustment of +47bps after adjusting for tenor and new issue premium.

Ofwat

Submissions before the CMA PR24 PD

7.880 In response to submissions in – and KPMG's report accompanying – the Disputing Companies' statements of case, Ofwat submitted that it disagreed with the approach put forward in three key areas.

(a) **The relevant credit rating to assess performance of secondary market trends**, ie that the use of Yorkshire Water more closely ties the analysis to an actual company, and that – given Yorkshire Water's Baa2 rating, sub-investment grade junior debt, and significant mark-to-market derivative liabilities – it is unlikely to represent the notional company.[822]

(b) **That tenor adjustments have theoretical and practical limitations**.[823]

   (i) Theoretically, water companies can outperform the index by issuing bonds at shorter tenors than assumed by the benchmark index.

   (ii) Ofwat conducted analysis to show that – in practice – tenor adjustments for bonds held by the same company often do not resolve differences in yield, and can produce unexpected results (eg increase yield differences).

(c) **The interpretation of market data to inform a possible benchmark adjustment.**[824] Ofwat presented analysis to demonstrate that average interest rates of recent bond issuances suggested that companies were able to issue in line with the PR24 FD allowance, including at a range of tenors. Ofwat noted the CMA's decision in the PR19 Final Report to remove a negative benchmark adjustment on the basis of insufficient data, and uncertainty as to whether historical trends would persist in future.

7.881 Ofwat presented some arguments in favour of no benchmark adjustment at all. It concluded that, in any case, current evidence made no case to increase the benchmark adjustment.[825] Following hearings with us and the Disputing

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[822] Ofwat (2025) Response to common issues on risk and return, p60, paragraphs 4.38–4.40.
[823] Ofwat (2025) Response to common issues on risk and return, p60, paragraphs 4.38–4.40.
[824] Ofwat (2025) Response to common issues on risk and return, pp68–73, paragraphs 4.45–4.57.
[825] Ofwat (2025) Response to common issues on risk and return, paragraphs 4.41–4.58.

Companies, Ofwat submitted that updated data would have led to it setting an adjustment of +20bps, rather than +30bps.[826]

Submissions following the CMA PR24 PD

7.882 Ofwat submitted that it supported many but not all of the choices adopted in our CMA PR24 PD.[827] In particular, it supported (i) the choice of averaging period, (ii) our focus on companies with Moody's Baa1 credit ratings, and (iii) that methods to control for tenor may not always accurately control for differences in yield which are solely a result of tenor.[828]

7.883 Ofwat had some disagreement with our methodology, particularly that of considering fixed-rate primary issuances with tenors over ten years. Ofwat presented analysis of some recent primary issuances with a range of tenors, and highlighted some recent short-tenor (ie under 10 year) issuances that had achieved a discount to the benchmark index.

7.884 Ofwat asked that, in reaching our final determination, the CMA take full account of the following points to avoid the risk of unduly overcompensating investors at the expense of customers:

(a) that the cost of debt should only be sufficient to cover average debt costs and not just the debt costs of tenors greater than ten years;

(b) that rolling forward the CMA's secondary markets analysis shows that a lower benchmark adjustment is required. Ofwat submitted there is every possibility that perceived risk (impacting secondary market yield premia to the benchmark index) will decline further, and that Baa1 companies' average new debt costs will be below the benchmark index;

(c) that most recent data suggests that a Baa1 company can raise debt below the benchmark, highlighting a recent Dŵr Cymru 12-year issuance which Ofwat submitted was 4bps below the benchmark index; and

(d) that Wessex and Northumbrian – while Baa1 rated – are on negative outlooks by Moody's, which may temporarily be elevating debt costs. Ofwat submitted that reasons include uncertainties over gearing and the ongoing CMA process (ie reasons which would not persist over the price control period).

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[826] Ofwat (2025) Written response to the Hearings, p2. Ofwat's opening statement slides set out that it would have applied at 10bps lower adjustment on the basis of updated secondary market data, based on updated analysis of secondary market yields. See Ofwat opening statement slides for the hearing for Ofwat on 10 July 2025, pp13–14.
[827] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p36, paragraph 5.7.
[828] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p36, paragraph 5.7.

7.885   Ofwat concluded that secondary markets analysis suggested that the benchmark adjustment should be no more than +20bps. It submitted that the most recent primary issuance from Dŵr Cymru suggested that no adjustment was required.

Third parties

7.886   CCW commissioned a report by MCC Economics which submitted concerns about the benchmark adjustment (+30bps at the PR24 FD). MCC Economics submitted that it believed there may be scope for reconsidering how judgement has been exercised, given its view that aggressive financial structures employed by shareholders had influenced observed elevated debt costs as compared to the benchmark index.[829] It submitted that an adjustment of -15bps is more consistent with the long-term trend and the characteristics of the notional efficient company.[830] MCC Economics further submitted that Ofwat ought to have pursued a true-up mechanism for the benchmark adjustment, as well as the underlying benchmark index, given the importance of the adjustment and uncertainty as to whether a premium to the benchmark would persist over the price control period.[831]

7.887   In response to the CMA PR24 PD, CCW commissioned a second report by MCC Economics which re-iterated the submission that the benchmark index should be adjusted downwards by -15bps, instead of a +30bps positive adjustment.[832] MCC also requested that we use short-term capital costs (with little explanation of the meaning or context for this) and use updated data.

Our assessment and decision

Choice of benchmark index and averaging period

7.888   We consider that the choice of index (the average yield of both of the iBoxx non-financial 10+ A and BBB indices) continues to represent a sensible benchmark for the cost of new debt over the price control period. It targets the notional credit rating, and its use in a number of price control decisions can contribute to regulatory predictability and consistency. We therefore continue to adopt this benchmark index to produce our estimate.

7.889   We also continue to use a one-month average of this benchmark index to establish our opening estimate of the cost of new debt. This is consistent with our approach to estimating the risk-free rate. We continue to adopt an indexation

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[829] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp12–14, paragraphs 35–43.
[830] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp12–14, paragraphs 35–43.
[831] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, pp12–14, paragraphs 35–43.
[832] CCW (2025) Response to CMA PR24 PD (MCC review appendix), p26.

mechanism, meaning that – at the end of the price control – the allowance reflects interest rate movements over the PR24 period.

Evidence for an adjustment to the benchmark index

7.890 There are two main sources of evidence which we can use to assess whether an adjustment to the benchmark index is required: primary issuances (ie comparing yield-at-issue of debt instruments to the benchmark index) and secondary market evidence (ie traded yields of relevant bonds, as compared to the benchmark index). We first discuss the main methodology issues raised in relation to how to conduct this analysis before presenting our assessment of the evidence.

Tenor and rating adjustments

7.891 We do not make tenor or rating adjustments either for individual instruments or for the benchmark index, when comparing the (primary and secondary) yields on water company debt instruments to the benchmark index.

Tenor adjustments

7.892 As was the case in the CMA PR24 PD, in considering whether a benchmark adjustment is required – ie whether a company with the target credit rating can raise debt at costs in line with the benchmark index – we continue to prefer reliance on observed, ie unadjusted, market prices and yields. We continue to consider that methods to control for tenor (eg hypothetical yield curves, or linear interpolation used to estimate G-spreads) may not always accurately control for differences in yield which are solely a result of tenor differences. This applies whether or not the intention of tenor adjustments is to mitigate the impact of recent shorter dated issuances, or to align the benchmark adjustment with what KPMG believes to be the sector's investment horizon.

7.893 In respect of the submission that it is more important to control for tenor in secondary markets analysis – given that pricing may reflect the remaining tenor of a bond rather than tenor at issue – we consider that (i) the analysis is already sufficiently limited to align with the benchmark index, and (ii) this is unlikely to be as clear cut as illustrated by KPMG. First, our and Ofwat's secondary markets analysis is limited to water company bonds held within the benchmark index – ie they qualify for inclusion on the basis of remaining tenor (10 or more years). Second, while remaining tenor to maturity may to some extent influence pricing in the secondary market, this is likely to be one of several influencing factors. It does not follow that 'only' the remaining tenor of a bond influences its pricing (reflected in its yield) in the secondary market, and that adjustments – which can produce unexpected results and do not always accurately control for tenor differences – would be required.

7.894   While making no adjustments to observed yields – in both primary and secondary markets analysis – we continue to assess instruments with tenors of 10 years or more, consistent with Ofwat's analysis in its PR24 FD. This is to align the assessment with – and ensure appropriate comparison to – the tenor of the benchmark index to which the adjustment applies. Companies may choose their own strategy with respect to tenor, which may evolve over time in different market conditions and come with upside and downside for shareholders (such as – for shorter dated issuances – more frequent refinancing or a shorter lock-in to a given interest rate).

Rating adjustments and choice of relevant credit rating for the analysis

7.895   With respect to rating – as set out in our PR24 CMA PD – we have some concerns around KPMG's control for rating in its analysis. For example – in its primary analysis – comparing a Baa1 rated bond to a simulated BBB iBoxx index (rather than the chosen A/BBB benchmark) does not represent an assessment of the spread to the (chosen) benchmark. The benchmark index is the average of the A and BBB indices, and not the simulated BBB index.

7.896   Given the aim to assess likely efficient debt costs over the price control period, we focus our analysis on instruments with credit ratings in line with the Baa1/BBB+ target. Consistent with KPMG's work, our analysis focuses on Baa1 Moody's ratings, given that fewer water companies are rated by both of Fitch and S&P.

7.897   In respect of KPMG's first report which considered bonds of Yorkshire Water (rated at the time Baa2), we separately consider whether notionally structured companies can achieve the target rating (Baa1/ BBB+) in our financeability assessment Chapter 8 (Risk and return).

New issue premium

7.898   We make no adjustment for 'new issue premium' to the secondary markets data. This is a new submission following the CMA PR24 PD, and we are not aware of any discussion of this during Ofwat's PR24 process. KPMG's referenced reports – in some cases – show that, to the extent a new issue premium may be present, it can be volatile, including positive or negative, depending on market conditions.[833] In this context, we consider it inappropriate to adjust observed data for this in informing an allowance which is fixed over the full price control period.

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[833] For example, KPMG cited M&G Investment (2024), Fixed income: What's the issue with the new issue premium?, see KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, paragraphs 5.3.1–5.3.3.

Assessment of recent market evidence

Primary issuances

7.899   Figure 7.15 and Figure 7.16 show fixed rated GBP 10+ primary issuances since November 2022 for Baa1 and A3 rated[834] issuances respectively. This period of assessment aligns with (i) Ofwat's observation, in its PR24 FD, that company issuances were on average below the benchmark until around November 2022 (ie that a premium to the benchmark was observed more after this date)[835] and (ii) KPMG's similar assessment of broadly stable average premia for Baa1 bonds over this period.[836]

Figure 7.15: Baa1 rated fixed GBP10+ issuances since November 2022
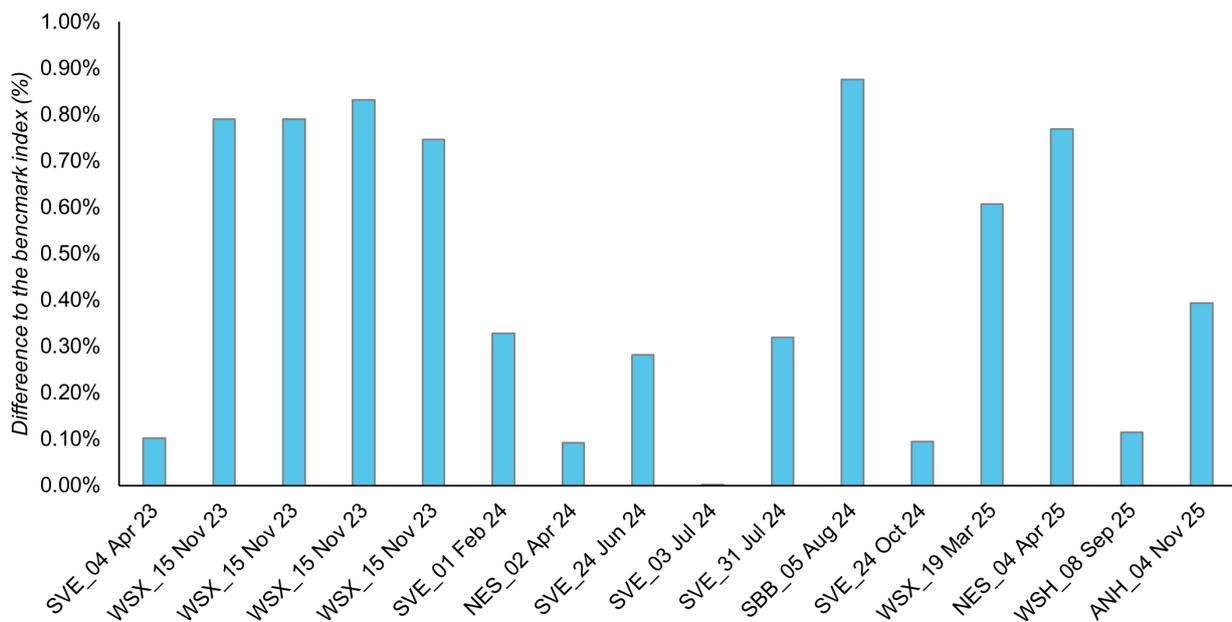
Source: CMA extension of Ofwat's primary issuance analysis to include issuances since its September 2024 cut-off.

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[834] We have considered premia of A3 rated issuances as a comparator with our core analysis of Baa1 rated issuances. If companies achieving credit ratings above the notional target observe costs above the benchmark, this supports that a benchmark adjustment is required to ensure that efficiently financed companies can raise and service new debt required to fund investment.
[835] Ofwat (2025) final determinations: Aligning Risk and Return – allowed return appendix, p96.
[836] KPMG (2025) Analysis of WACC in the PR24 Provisional Determinations, pp24–25, paragraphs 5.2.1–5.2.11.

Figure 7.16: A3 rated fixed GBP 10+ issuances since November 2022

Source: CMA extension of Ofwat's primary issuance analysis to include issuances since its September 2024 cut-off.

7.900　Table 7.24 shows different averages of Baa1 and A3 fixed rate GBP 10+ issuances over the period of assessment. We note that a relatively low sample size, assessed over a relatively long period, is present, and that idiosyncratic factors relating to each issuance are likely to influence the data. However, in general, we broadly observe that both Baa1 and A3 issuances are showing a premium to the benchmark index. This appears to be around +35 to +47bps for Baa1 issuances and around +19 to +25bps for A3 issuances.

Table 7.24 : Different averages of primary issuances for Baa1 and A3 fixed GBP 10+ issuances since November 2022

Averages (Bps)	Baa1	A3
Since Nov-22: simple average	44.6	24.0
Since Nov-22: weighted average by issuance size	38.0	25.4
Since Nov 22: median	36.1	18.9
1 year to cut-off, simple average	47.1	22.5
2 years to cut-off, simple average	35.3	23.3

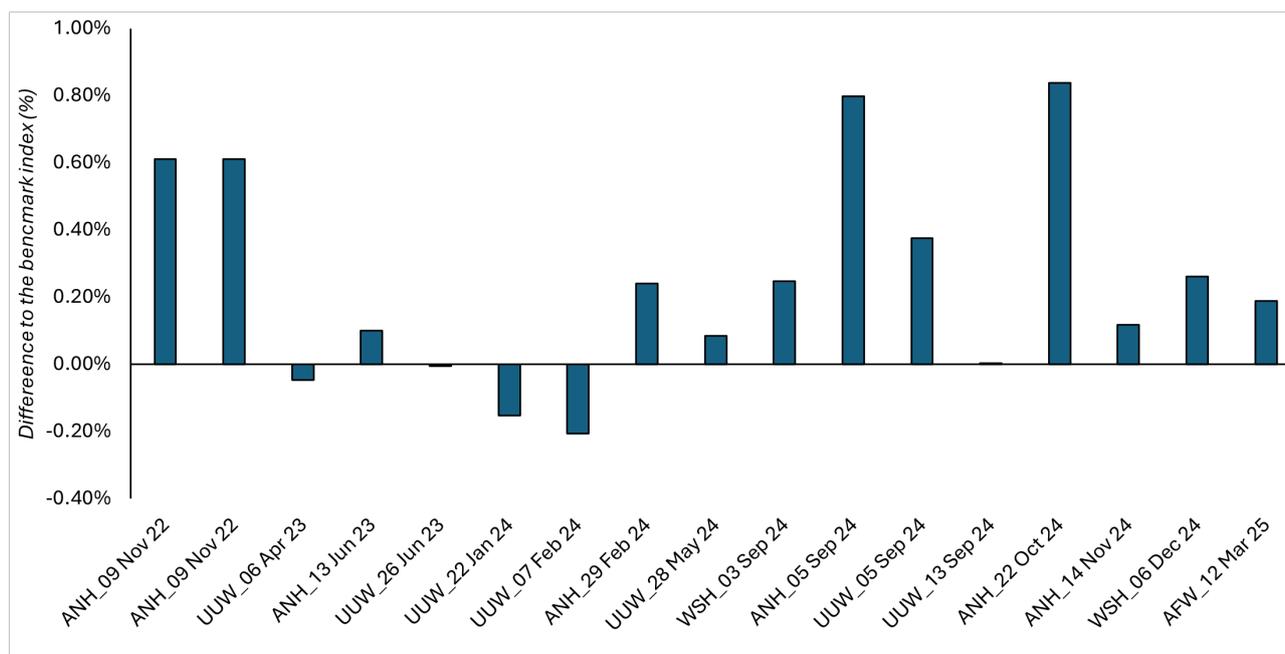*Source: CMA extension of Ofwat's primary issuance analysis to include issuances since its September 2024 cut-off*

Secondary market analysis

7.901　To account for the relatively small sample size in primary issuances, we also assess secondary market trends against the benchmark index.

7.902　The figures below show average secondary market yields of water company bonds with Baa1 credit rating, held within the benchmark index, as of our November 2025 data cut-off. The figures show average yield differences to the benchmark index (i) in aggregate (Figure 7.17) and (ii) for each company (Figure

7.18). We consider each bond as of the time the issuing company held a Baa1 credit rating.[837]

Figure 7.17: Secondary market aggregate yields as compared to the iBoxx benchmark of Baa1-rated water company bonds, as at the date issuer became Baa1-rated
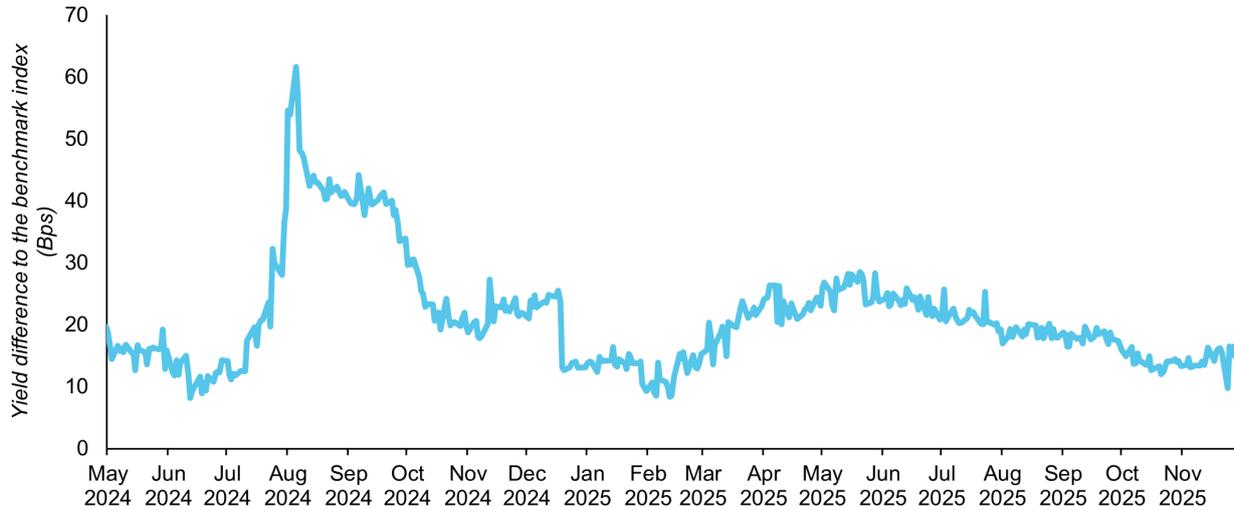
Source: CMA analysis of LSEG and S&P Global market data.

Figure 7.18: Secondary market mean average yields as compared to the iBoxx benchmark of Baa1-rated water company bonds, as at the date issuer became Baa1-rated
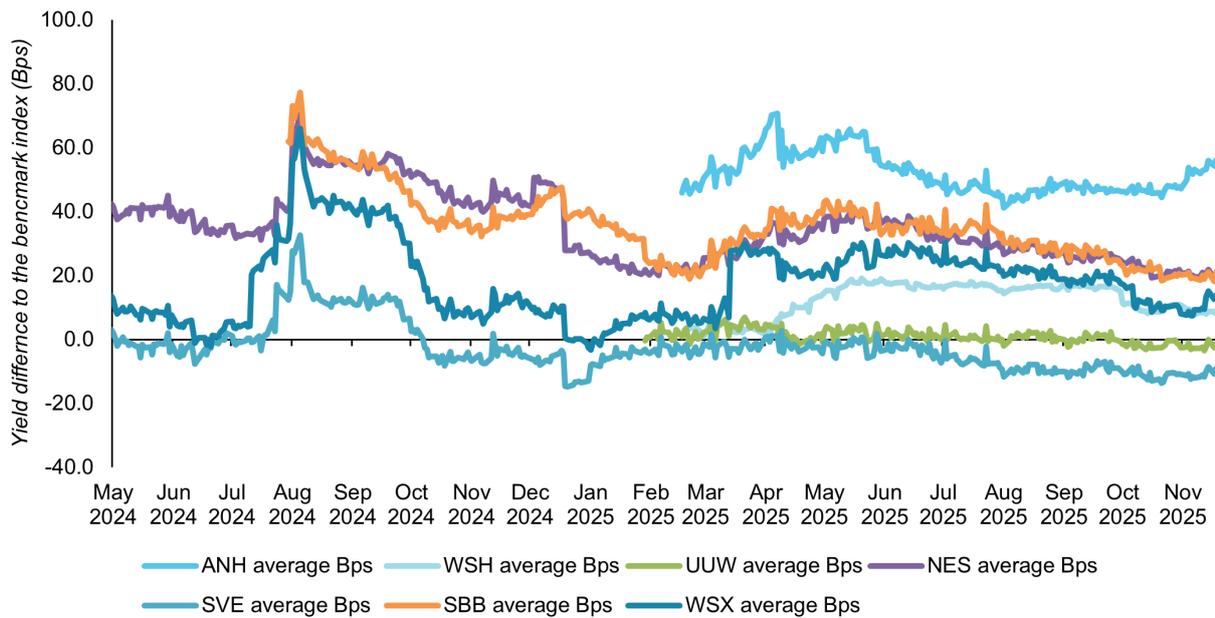
Source: CMA analysis of LSEG and S&P Global market data.

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[837] Bonds are included throughout the period, if consistently Baa1.

7.903 Table 7.25 shows simple mean averages, calculated consistently with Ofwat's PR24 FD methodology, of the data above (ie company by company averages of premia to the benchmark).

Table 7.25 : Average secondary market premia to November 2025 cut-off (Bps)

	Simple average	Weighted average
1 month	15	18
6 month	18	21
12 month	19	N/A

Source: CMA analysis of LSEG and S&P Global market data; weighted average is calculated with reference to each company's average issuance size in the sample of bonds

7.904 In response to KPMG's submission that a one-month average is most appropriate, we consider – in this case – that a balance is to be struck between the use of recent market data to inform expectations of the future and the use of longer term trends to inform an adjustment which will be fixed over the five-year period of the price control. In this case, we consider that a benchmark adjustment informed by longer term trends (with the final adjustment informed by an in-the-round assessment of evidence) is more appropriate.

7.905 While the best predictor of future interest rates are, in our view, spot or short-term averages of yields (in line with our approach in the Risk-free rate section), in estimating this adjustment we need to be mindful of the limitations of the data available to us, meaning longer-term trends can be useful. We also note that on current data there is not much of a difference between the averaging periods shown in the table above.

Conclusions on the benchmark adjustment

7.906 Having considered all the evidence in the round, we conclude that a positive benchmark adjustment is required, supported by both primary and secondary market evidence. We broadly observe that the premium Ofwat assessed at the time of its PR24 FD persists when considering bonds which align with the benchmark index (ie have tenor over 10 years), including for companies achieving the notional credit rating, and for those with rating above the notional target (ie A3-ratings). This limits the risk that allowing a benchmark adjustment could inappropriately reward or remunerate riskier financing choices.

7.907 In both primary issuance and secondary markets analysis, idiosyncratic factors of companies and particular bonds are likely to impact the data. We also note that in practice companies are likely to raise a mixture of short-term and long-term debt, reflecting their own treasury policies, which can impact on their actual performance against the allowance. However, on balance, we consider that we should give some weight to both the primary issuance evidence for longer-dated tenors and to

secondary market analysis (which includes only bonds contained in the benchmark index, ie with remaining tenor over 10 years).

7.908   Secondary market analysis suggests a lower benchmark adjustment than at the time of Ofwat's FD (ie around 15 – 21bps, based on recent averages, as compared to Ofwat's 24bps). We note a different sample of bonds used, given changes in issuer credit ratings in early 2025 (ie a number of ratings downgrades) and new issuances.

7.909   Although primary issuances reflect actual cost to relevant companies, there continue to be limitations owing to sample size. Notwithstanding this limitation, primary market evidence supports a higher adjustment compared to secondary market evidence, of around 35–47bps for Baa1 bonds with a tenor over 10 years.

7.910   On the basis of the evidence available, we include a **+30bps** adjustment – consistent with Ofwat's PR24 FD and the CMA PR24 PD – in our cost of new debt. This broadly gives equal weight to both secondary and primary market evidence, which we consider represents a balanced reading of the evidence.

7.911   In response to MCC's request to consider a true-up mechanism at the end of the price control period, we conclude that this would not be appropriate. As was the case at Ofwat's PR24 FD, determining the level of the adjustment requires judgement in considering both primary issuances and secondary market movements, themselves open to discussion on: (i) the availability of relevant data; (ii) the inclusion or exclusion of certain instruments; and (iii) the relevant time period of assessment, among other factors. Any true-up mechanism would therefore require a significant degree of judgement to be exercised ex-post, and we do not consider the potential benefits of providing a more accurate allowance outweigh the potential drawbacks from increased uncertainty around the final allowance.

Deflating the nominal cost of new debt

7.912   As set out in the inflation section (see Inflation and estimating the cost of capital in real terms above), we deflate the nominal estimate using our long-term CPIH assumption of 2.4% to estimate our CPIH-real cost of new debt.[838]

Estimate for the cost of new debt

7.913   We have calculated a one-month trailing average of the benchmark index at 30 November 2025 of 5.97%. Applying the +30bps adjustment set out above

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[838] The 2.4% CPIH assumption should also be used to deflate the nominal iBoxx in Ofwat's indexation mechanism.

produces a nominal cost of new debt allowance of 6.27%. Applying our long-term CPIH assumption of 2.4% results in a cost of new debt estimate of **3.78%**.

Share of new debt

Summary

7.914   We estimate the share of new debt to be 28%. The key driver of the increased estimate – as compared to the Ofwat's PR24 FD – is using updated assumptions for RCV growth.

Introduction

7.915   The share of new debt estimate determines the relative weights of new and embedded debt used to calculate the overall cost of debt allowance. It is estimated based on an assessment of debt refinancing and capital investment (ie RCV growth) needs, and – as with the rest of the cost of debt allowance – is generally a sector-wide, rather than company specific, assumption.

Ofwat's PR24 FD approach

7.916   Ofwat estimated a 24% share of new debt by assessing a sector average of new debt needs.[839] Following company requests to apply company specific weights, it maintained this sector average approach following its PR24 DD.[840] It assessed that the majority of individual differences between companies' new debt needs were driven by refinancing maturing debt rather than RCV growth, and its intention was to ensure that customers were not impacted by individual companies' financing choices.[841]

7.917   To estimate the allowance, Ofwat assumed:[842]

(a)   **refinancing:** all debt instruments maturing over the FY25 to FY30 period were assumed to be refinanced as new debt;

(b)   **RCV growth:** applying an assumption of 5% annual real RCV growth, 55% of this is funded by debt and 45% funded by equity, in line with the notional structure;

(c)   **accretion:** Ofwat's PR24 FD noted an assumption of 2.0% accretion for CPI-linked balances and 2.9% for RPI-linked balances; and

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[839] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp99–100.
[840] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp99–100.
[841] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp99–100.
[842] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp99–100.

(d) **rounding:** the proportion is rounded to the nearest whole percentage point.

Parties' submissions

Disputing Companies

7.918 Northumbrian did not make specific comments on the methodology, but submitted an updated estimate of the proportion of embedded debt of 74.7% (implying a share of new debt of 25.3%).[843] Wessex did not make any specific comments on the share of new debt estimation.[844]

Inputs for the sector-wide estimate

7.919 Anglian,[845] Southern[846] and (in its statement of case) South East[847] referred to arguments set out by KPMG.[848] KPMG's first report – accompanying statements of case – assessed the inputs for Ofwat's estimation, and submitted that a number of adjustments should be made.[849] KPMG's subsequent report – accompanying Disputing Companies' responses to the CMA PR24 PD – focused on consistency of the gearing assumption across the calculation, and on the RCV growth assumption.[850] We summarise the combined core arguments of both reports here:

(a) **sample of companies**: KPMG submitted that using all water companies' embedded debt balances was not consistent with the approach to setting the embedded debt allowance (ie using embedded debt costs of WaSCs and large WoCs);[851]

(b) **gearing assumption**: KPMG submitted that using the notional (ie 55%) gearing assumption was not consistent with the way the embedded debt allowance is set, in which debt balances reflect 'actual' gearing.[852] KPMG used an estimate of average gearing across the industry (70.5%) in its calculation, but submitted that the point is not about the level of gearing used but rather that the level should be consistent through the analysis.[853]

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[843] Northumbrian SoC, p156, Figure 52.
[844] Wessex SoC, p90, paragraph 10.12(e).
[845] Anglian SoC, pp203–204, paragraphs 787–789. Anglian (2025) Response to CMA PR24 PD, p205, paragraph 569.
[846] Southern SoC, p492, paragraph 507, Table 10. Southern (2025) Response to CMA PR24 PD, pp134–135, paragraphs 7.25–7.28.
[847] South East SoC, p84, paragraph 6.39.
[848] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48. KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p28, section 6.
[849] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[850] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p28, section 6.
[851] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[852] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[853] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p28, paragraph 6.0.4

(c) **accretion:** KPMG submitted that this should be 'split' between embedded and new debt, which would reduce the new debt requirement;[854]

(d) **inflation:** KPMG implied that including accretion for ILD balances, but incorporating a 'real' assumption for RCV was inconsistent, and submitted that it is more 'intuitive' for the calculation to be performed based on expected nominal RCV growth;[855]

(e) **RCV growth:** KPMG submitted that Ofwat's 5% assumption was based on data received in advance of the PR24 DD, and was therefore outdated. KPMG applied an 8.1% nominal RCV growth rate in its initial calculations, based on Ofwat's PR24 FD outputs.[856] In its second report, KPMG submitted that (i) the nominal RCV growth assumption should include all delivery and gated mechanisms, and (ii) it should reflect the final position of the CMA's redeterminations.[857]

(f) **opening RCV:** KPMG submitted that this value was included from the PR24 DD, albeit it was broadly consistent with the value implied by the PR24 FD.[858]

7.920 KPMG's final calculations produced an estimate for the share of new debt of 29% (as compared to Ofwat's 24%), with the increase essentially driven by its application of a nominal RCV growth assumption, and its sector average gearing assumption.[859]

Company specific RCV growth assumptions

7.921 Southern submitted that its real RCV growth rate over AMP8 is significantly higher than the average for the industry (a simple increase of 59% compared to 28% implied by Ofwat's PR24 FD).[860] It submitted that this is driven by a capital programme mandated by regulation, and is outside of its control.[861] As the cost of new debt is higher than the cost of embedded debt, Southern submitted that an understated share of new debt underfunds its new debt, which disincentivises it from investing.[862]

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[854] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[855] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[856] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[857] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p28, paragraph 6.0.7
[858] KPMG (2025) Estimating the Cost of Capital for PR24, pp128–129, section 11.3, Table 48.
[859] KPMG (2025) Estimating the Cost of Capital for PR24, section 11.3, Table 48, pp128–129; Disputing Companies response to Disputing Companies RFI01, Q1.
[860] Southern SoC, pp492–493, paragraphs 508–509. The file Southern reference to make this submission (its PR24 DD financial model) implies an annual nominal RCV growth of around 12%. See Southern SoC, supporting document titled 'SOC-7-0074_Southern_Water_PR24_DDR_financial_model.xls'.
[861] Southern SoC, p493, paragraph 509.
[862] Southern SoC, p493, paragraph 510.

7.922   In the CMA PR24 PD, we provisionally found that many aspects of the price control framework sufficiently compensate for differences in capex requirements for different companies (ie in setting base and enhancement allowances), and provisionally concluded not to apply a company specific share of new debt to Southern's WACC estimate.

7.923   Following the CMA PR24 PD, Southern submitted that:[863]

(a)   it did not consider that a company specific totex allowance mitigated the financing risk it bore from a sector-average share of new debt, given that – it submitted – its RCV growth rate is the highest in the sector. It further submitted that it is internally inconsistent to provide company-specific totex allowances and a share of new debt informed by sector average RCV growth;

(b)   its request was not for an industry-wide change to how the share of new debt is set, but rather for a company specific adjustment (**CSA**). It submitted that there is regulatory precedent for this approach, and that it would be straightforward to implement; and

(c)   the impact of the change on its own cost of debt allowance would be material, and that the impact of its RCV growth on debt financeability had recently been re-emphasised in rating agency reports.

Ofwat response

Inputs for the sector-wide estimate

7.924   In respect of KPMG's submissions on RCV growth and opening RCV inputs (ie that these had been informed by PR24 DD inputs), Ofwat submitted that RCV growth can only be calculated once decisions have been made and financial modelling completed to take account of totex, PAYG and RCV run-off allowances.[864] Ofwat submitted that calculating the share of new debt is therefore an iterative process (ie cost of debt inputs are needed for financial modelling, and an RCV growth estimate is needed to estimate the cost of debt).[865] It submitted that the inputs to the share of new debt were therefore not fully updated for its PR24 FD.[866]

7.925   In respect of KPMG's submissions on accretion, Ofwat submitted that KPMG had misunderstood Ofwat's use of accretion in Ofwat's calculation.[867] Ofwat submitted

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[863] Southern (2025) Response to CMA PR24 PD, pp135–136, paragraphs 7.29–7.32.
[864] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.68.
[865] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.68
[866] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.68.
[867] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.70.

that it had updated its embedded debt model ahead of its PR24 FD to mean that accretion of ILD balances over the price control period is included in the embedded debt allowance meaning that accretion of ILD balances does not need to be added to the allowance in the same way it had been before.[868] Ofwat's updated model made an allowance for change in accretion to calculate refinancing needs.[869]

7.926   Following the CMA PR24 PD, Ofwat submitted that it was not necessarily opposed to the methodology used.[870] However, it submitted that it did not fully understand our reasoning in the CMA PR24 PD. [871] Ofwat submitted that indexing the RCV does not necessarily lead to companies issuing more debt, and that the real RCV increase should equate to the investment needs of each company based on the notional structure.[872]

7.927   However, as also noted below (under '**Company specific RCV growth assumptions**'), Ofwat discussed that a single industry assumption is preferable to individual calculations as this reduces complexity and moral hazard.[873] It concluded that – given uncertainty as to whether a relatively high share of new debt assumption would favour companies or customers[874] – it was not opposed to the CMA PR24 PD's adjustments to the calculation, if this avoided individual company calculations.[875] It proposed an alternative calculation, based on all-notional inputs, retaining the nominal 8.5% RCV growth assumption, which resulted in a 27% share of new debt (the same as the CMA PR24 PD estimate).[876]

Company specific RCV growth assumptions

7.928   Ofwat submitted that application of a sector-wide share of new and embedded debt is a consistent application of regulatory policy, and applying company-specific weights would have been a material late stage change to its methodology.[877] It submitted that implementing this would introduce further complexity for PR24 and future price controls, requiring adequate consultation.[878] It further submitted that company-specific weights (ie influenced by individual refinancing needs) would

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[868] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.70.
[869] Ofwat (2025) Response to common issues on risk and return, p75, paragraph 4.70.
[870] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp38–39, paragraphs 5.14–5.19.
[871] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp38–39, paragraphs 5.14–5.19.
[872] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraph 5.16.
[873] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraph 5.17.
[874] This is because the cost of new debt is indexed, and depends on movements in the benchmark index over the price control period. There is uncertainty as to whether new debt remains more expensive than embedded debt. If new debt becomes 'cheaper' than embedded debt as a result of interest rate movements, a relatively high share of new debt assumption could favour customer bills.
[875] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraphs 5.17–5.18.
[876] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraph 5.19.
[877] Ofwat (2025) Response to common issues on risk and return, pp75–76, paragraphs 4.71–4.72.
[878] Ofwat (2025) Response to common issues on risk and return, p76, paragraph 4.72

risk unwinding the notional approach and increase customers' exposure to individual companies' financing choices.[879]

7.929 Following the CMA PR24 PD, Ofwat submitted that having a single industry assumption was preferable to individual calculations as this reduces complexity and reduces moral hazard.[880] It submitted that individual calculations would mean each company could argue for an individual share of new debt in its favour at each review.[881]

Our assessment and decisions

7.930 Before discussing the detailed points made, we first note that Ofwat's PR24 FD approach already gives some weight to individual companies' circumstances by using data on individual forecast refinancing needs and RCV growth. The second observation is that the most material assumptions for the calculation are the assumed rate of RCV growth and the gearing assumption. These two factors explain most of the difference between KPMG's and Ofwat's PR24 FD estimates.

Updating inputs to the estimate

7.931 Many of the core aspects of the methodology for the calculation of the share of new debt were not in dispute, with KPMG adopting a broadly similar approach to Ofwat in its estimates. Following the PR24 CMA PD, KPMG focused its arguments on continuing to input a sector average (rather than notional) gearing to the calculation,[882] submitting this was to avoid a mixing of actual and notional inputs. Ofwat proposed an alternative calculation which included only notional inputs, submitting this also avoided a mixing of actual and notional inputs.

7.932 While we recognise a mixture of 'actual' and 'notional' inputs to the calculation, we consider that (i) this is consistent with the broader methodology in setting the allowed cost of debt,[883] and (ii) this is helpful in sufficiently incorporating company-specific circumstances (eg actual expected sector refinancing) while reducing the need to set a specific share of new debt for each company.

7.933 We have therefore not relied on Ofwat's alternative calculation to set the share of new debt. However, we gain comfort in its results as a cross-check, given that it leads to a very similar estimate.

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[879] Ofwat (2025) Response to common issues on risk and return, p76, paragraph 4.73.
[880] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraph 5.17.
[881] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p39, paragraph 5.17.
[882] KPMG's report accompanying statements of case also inputted sector average gearing, among a number of proposed methodology changes. Following the CMA PR24 PD, KPMG no longer submitted the need for many of its methodology changes. However, it continued to submit that the gearing assumption should be consistently 'actual' or 'notional' throughout the analysis, and that RCV growth assumptions should be updated for the CMA PR24 FD financial modelling.
[883] ie the broader cost of debt methodology incorporates a mixture of actual debt costs (in balance sheet-led estimates), index-led data and assumptions around the notional structure (eg in the 'actual notional' estimate).

7.934　We summarise the core components of our share of new debt estimate below.

7.935　With respect to the **opening RCV balance**, we have updated this for PR24 FD inputs, noting that it makes little to no difference to the rounded share of new debt estimated percentage.

7.936　For the **gearing assumption**, we continue to use the notional gearing of 55% (as did Ofwat), to calculate new debt requirements to finance RCV growth, rather than use sector average gearing. We continue to consider that this is more consistent with the notional capital structure and reduces the risk of customer exposure to the impact of companies' individual financial choices.

7.937　Regarding the **choice of companies** (ie the whole industry or only WaSCs and large WoCs), we note that the assumption makes little difference to the rounded percentage estimated share of new debt. We continue to adopt an industry-wide estimate, noting that the estimate applies to the industry as a whole.

7.938　With respect to **RCV growth** and **accretion**, we continue to perform all calculations in nominal terms, for consistency with how the refinancing requirements are calculated.[884] This means we use nominal RCV growth to estimate the amount of debt needed to finance RCV growth.

7.939　In response to Disputing Companies' submissions, we have updated our industry-wide estimated annual RCV growth rate for our CMA PR24 FD financial modelling.[885] Based on this, and on Ofwat's PR24 FD for non-disputing companies, we adopt a rounded real growth assumption of 6.1%. This represents a nominal rounded growth rate estimate of 8.6%, using our 2.4% CPIH assumption.

7.940　With respect to **accretion**, we have adopted the approach taken by Ofwat in its PR24 FD, by including accretion of embedded debt balances to estimate the refinancing requirements.[886]

7.941　Our calculation results in a rounded share of new debt estimate of **28%**.

Applying company-specific RCV growth assumptions, response to Southern's CSA

7.942　As in the CMA PR24 PD, we recognise that different companies may have different capital investment requirements, impacting differences in RCV growth rates across the sector. However, we consider that many other aspects of the

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[884] We consider that there is a slight inconsistency in Ofwat's FD calculations as it mixes nominal and real inputs. In Table 23 of Ofwat (2025) PR24 final determinations: Aligning risk and return – allowed return appendix, all calculations in the table are meant to be in nominal terms but the values in row H appear to be in real terms.
[885] Including our updated CMA PR24 FD modelling for Disputing Companies, we estimate the total annual average sector growth rate to be 6.10% and total WaSC and large WoC growth rate to be 6.09%.
[886] This is a slight change from our PD. We also no longer make an adjustment for accretion on new debt, as we no longer consider it necessary.

price control framework sufficiently compensate for this (ie in setting base and enhancement allowances). We also consider the financeability of the price control for each company (on a notional basis) by considering the differences in expenditure and RCV growth profiles at chapter 8 (Risk and return). We also assess Southern's request for a CSA in the context of the broader cost of debt estimate, which includes Southern's 'actual' debt costs in the balance sheet-led approach to inform the cost of embedded debt, as well as its CMA PR24 FD modelled RCV growth to inform the share of new debt.

7.943   In respect of Southern's request for a CSA, after considering its evidence submitted, we find:

(a)   Southern-specific data is sufficiently incorporated into the sector-wide estimate. As noted, as a WaSC, we use Southern's 'actual' debt instruments to inform the embedded debt allowance as well as the refinancing requirements which feed into the share of new debt calculation. The nominal RCV growth assumption used in the share of new debt calculation represents total industry-wide growth, which draws on Southern's company-specific estimate, including as updated for our redeterminations. We estimate Southern's average annual RCV growth over AMP8 – under our CMA PR24 FD modelling – to be around 7.4% in real terms, or 7.7% in real terms including its delivery mechanism.[887] This is at a similar level to a number of others in the industry.[888]

(b)   Southern submits that its request is for a CSA, rather than a policy change from an industry-wide allowed return. It also submits that allowing company-specific totex but an industry-wide share of new debt is internally inconsistent. Many companies have a range of company specific reasons for out- or under- performance against the allowance (including through differences in RCV growth). Allowing a CSA in this case, including given that Southern's modelled growth is in line with others, could – by extension – encourage an argument that each company in the industry have a different cost of debt allowance. This could dampen incentives to raise debt efficiently, and would increase the complexity of the price control framework.

7.944   For the purposes of our cost of debt estimate, we therefore continue to adopt a sector wide approach.

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[887] This is estimated as a compound annual growth rate (CAGR).
[888] For example, we estimate the following average real growth rates for others in the sector under our CMA PR24 FD modelling or drawing on Ofwat's PR24 FD: Wessex: 7.4%, Severn Trent: 7.0%, Anglian: 6.7%, Thames Water: 6.7% (including its delivery mechanism).

Our share of new debt estimate

7.945   Largely maintaining Ofwat's methodology, we:

(a)   input a rounded 6.1% RCV real growth assumption, translating to an 8.6% nominal growth assumption (using our 2.4% CPIH assumption), updating the opening RCV assumption for FD outputs; and

(b)   include our updates to embedded debt for qualifying debt issuances between Ofwat's 30 September 2024 cut-off to 31 March 2025. As set out above, for accretion, we adopt the methodology of Ofwat's PR24 FD.

7.946   Table 7.26 shows the share of new debt calculation used to produce our estimate, largely consistent with Ofwat's methodology.[889]

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[889] For comparison with Ofwat's PR24 FD, see Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p101, Table 23.

Table 7.26 : CMA updated share of new debt calculation (£bn, nominal)

			FY25	FY26	FY27	FY28	FY29	FY30
A	Opening embedded debt	= C (t − 1)		76.4	72.1	68.9	65.1	61.0
B	Change in embedded debt			4.3	3.2	3.8	4.1	3.7
C	Closing embedded debt	= A − B	76.4	72.1	68.9	65.1	61.0	57.3
D	Opening new debt	= I (t − 1)		0.0	7.5	16.6	26.8	37.8
E	Accretion on embedded debt			0.7	0.7	0.7	0.7	0.7
F	Change in embedded debt	= B		4.3	3.2	3.8	4.1	3.7
G	Refinancing*	= E + F		5.0	3.9	4.5	4.8	4.4
H	New debt for 8.6% RCV growth			2.5	5.2	5.7	6.2	6.7
I	Closing new debt	= D + G + H	0.0	**7.5**	**16.6**	**26.8**	**37.8**	**48.9**
J	**Proportion of new debt**	**= I / (I +C)**		**9.4%**	**19.4%**	**29.2%**	**38.2%**	**46.0%**

*Source: CMA analysis of updated Cost of Debt model. Note: *the total refinancing requirement in the CMA PR24 PD was slightly understated as it erroneously omitted accretion on embedded debt.*

Averaging the new debt requirement over the price control period results in an updated estimate for the share of new debt of **28%**.[890]

Additional debt costs

Summary

7.947 We provide for an additional borrowing costs allowance of +20bps, unchanged from the CMA PR24 PD. To estimate this, we include: (i) a +5bps estimate for issuance costs; and (ii) a +15bps liquidity costs allowance, based on an updated methodology to Ofwat's PR24 FD.

Introduction

7.948 Companies incur costs – in addition to interest – associated with raising debt finance. Examples include issuance fees to financial intermediaries, and costs associated with maintaining sufficient liquidity to raise debt at competitive interest rates. In this section, we assess Ofwat's approach to its allowance for additional debt costs, Disputing Companies' submissions and Ofwat's response, before setting out our view on an appropriate allowance for additional debt costs.

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[890] This is the average of numbers in row J in Table 7.26.

Ofwat's PR24 FD approach

7.949   In its PR24 FD, Ofwat applied an adjustment of +15bps to account for the additional debt costs associated with issuance, liquidity and cost of carry. This comprised:[891]

(a)   a **+5bps allowance for issuance costs**, based on an assessment of issuance costs submitted in Table 4B of companies' APR data, which Ofwat said ranged from 10bps for short duration debt to less than 1bp for the longest duration debt. The 5bps allowance was consistent with previous reviews; and

(b)   a **+10bps allowance for liquidity** and 'cost of carry', reflecting companies' need to maintain adequate levels of cash liquidity, including to raise finance at competitive interest rates and maintain credit ratings. Ofwat's calculations were set out in its published model,[892] which assessed:

(i)   a liquidity component (estimated to be +7bps). This was constructed using sector-average liquidity requirement forecasts based on PR24 DD financial models. These assessed 'liquidity runways' over the price control period (primarily driven by capex requirements) for each company, ignoring debt refinancing needs. The average of this[893] was assumed to be raised six months in advance of need, held at an assumed 'cost of holding cash'. The assumed cost of holding cash was based on a comparison of daily benchmark index yields to Bank of England data on overnight index swap spot rates over a two-year period from calendar years 2020 – 2022;[894] and

(ii)   an RCF component (estimated to be +3bps). This assessed the cost of holding revolving credit facilities (RCFs) requirements to cover a full year based on PR24 DD forecast liquidity and refinancing needs, assessed using average RCF commitment fees reported in companies' APR data submissions.[895]

7.950   In respect of what is known as 'basis risk', having assessed companies' submissions, Ofwat made no allowance for this.[896] Basis risk is risk that arises from the mismatch between an RCV indexed by CPIH, and the majority of ILD being linked to another inflation measure, RPI. Ofwat's assessment set out that – to the extent that companies choose to incur claimed costs associated with mitigation of basis risk – this is a risk management choice of the company in

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[891] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, pp102–104.
[892] Ofwat (2024) PR24 RR06 - Analysis of liquidity requirements.xls.
[893] Ie averaging across WaSCs and large WoCs, and across the 2025-30 price control period.
[894] Ofwat (2024) PR24 RR06 - Analysis of liquidity requirements.xls.
[895] Ofwat (2024) PR24 RR06 - Analysis of liquidity requirements.xls.
[896] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p104.

question (and is therefore to be borne by shareholders rather than customers).[897] It further discussed that: (i) companies had not engaged with its PR24 DD assessment that the presence of fixed rate debt in the notional structure mitigates this risk to the extent that outturn inflation tends to be higher than the Bank of England target; and (ii) analysis from KPMG on beta risk had not considered that Ofwat's policy was known and should already be impacting beta.[898]

Parties' submissions

Disputing Companies

7.951 All companies referred to analysis by KPMG on additional debt costs in their statements of case. Anglian,[899] Southern,[900] and South East[901] referred to the report discussed in earlier sections, appended to statements of case for the purposes of our redeterminations.[902] Northumbrian[903] and Wessex[904] asked us to reconsider their PR24 DD responses, which appended an earlier version of a KPMG report which made similar arguments.[905] Following the CMA PR24 PD, Anglian,[906] Southern,[907] and South East[908] referred to a further report from KPMG in this area which considered our updated provisional methodology on liquidity costs, and responded to our provisional assessment of basis risk.[909] Following the CMA PR24 PD, Southern also made an additional request for a company specific allowance for additional debt costs. We set out the relevant key aspects of these submissions below.

Issuance costs

7.952 None of the companies disputed the +5bps allowance for issuance costs, and KPMG adopted this estimate in its reports prepared for the purposes of our redeterminations.[910]

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[897] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p104.
[898] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p104.
[899] Anglian SoC, p201, paragraph 774.
[900] Southern SoC, pp493–500, paragraphs 516–569.
[901] South East SoC, p83, paragraph 6.33.
[902] KPMG (2025) Estimating the Cost of Capital for PR24, pp129–138, section 11.4.
[903] Northumbrian SoC, p154, paragraph 588.
[904] Wessex SoC, p90, paragraph 10.12(e).
[905] KPMG (2024) Estimating the Cost of New Debt and Additional Borrowing Costs for PR24 (submitted as Northumbrian SoC, Annex SOC224).
[906] Anglian (2025) Response to CMA PR24 PD, p206, paragraph 570
[907] Southern (2025) Response to CMA PR24 PD, pp136–137, paragraphs 7.36–7.40
[908] South East (2025) Response to CMA PR24 PD, p94, paragraph 6.39.
[909] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, section 7.
[910] KPMG (2025) Estimating the Cost of Capital for PR24, p129, paragraph 11.4.1, KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, p29, paragraph 7.0.1.

Liquidity and cost of carry

KPMG's report prepared in response to the PR24 DD

7.953 As noted, Northumbrian[911] and Wessex[912] asked us to reconsider their PR24 DD responses, which appended an earlier version of a KPMG report on the cost of debt.[913] This report proposed an estimated allowance of 12–14bps for the cost of carry and liquidity, based on the construction of three estimates with different methodologies.[914]

7.954 The key request of this report – based on its recommended allowance and recommended choice of methodology – was to apply a longer (eg 18-month) pre-financing period in the estimation of the allowance under Ofwat's existing methodology.

KPMG's report accompanying statements of case

7.955 In the report accompanying statements of case, KPMG estimated a liquidity allowance of 21–30bps, largely driven by assumptions that: (i) cash holding needs are higher than estimated by Ofwat (ie there is a need to include debt refinancing as well as capex driven 'liquidity runways'); and (ii) debt should be pre-financed for a longer period.

7.956 KPMG made the following updates to Ofwat's broad methodology:[915]

(a) Using cashflow and debt refinancing forecasts from the PR24 FD – rather than the PR24 DD – financial models, and using different outputs from these models;

(b) Changing Ofwat's estimates for the 'cost of holding cash' using one-month averages of overnight index swap spot and forward rates as compared to KPMG's updated estimate of the cost of new debt (compared to Ofwat's two-year period in calendar years 2020–2022);

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[911] Northumbrian SoC, p154, paragraph 588.

[912] Wessex SoC, p90, paragraph 10.12(e).

[913] KPMG (2024) Estimating the Cost of New Debt and Additional Borrowing Costs for PR24 (submitted as Northumbrian SoC, Annex SOC224).

[914] These methodologies were: (1) the 'updated Ofwat model' which assumed (i) an 18-month pre-financing period; and (ii) a cost of holding cash based on comparing short-term interest rates with the benchmark index, including a benchmark adjustment of +34bps (consistent with its proposed cost of new debt adjustment); (2) the 'KPMG model', a 'top-down model', based on forecast RCV growth, forecast RCF facility size (as a percentage of RCV) and forecast cost of holding cash, this model also applied an 18-month pre-financing period; and (3) The 'CMA PR19 and Ofgem model' which assessed average industry cash and cash equivalent balances expressed as a percentage of net debt, multiplied by an estimated cost of holding cash. See KPMG (2024) Estimating the Cost of New Debt and Additional Borrowing Costs for PR24 (submitted as Northumbrian SoC, Annex SOC224), pp36–43.

[915] KPMG (2025) Estimating the Cost of Capital for PR24, paragraphs 11.4.2–11.4.24, Disputing Companies response to Disputing Companies RFI01, Q1.

(c)   Extending assumptions on the length of time cash needed to be raised in advance of need, based on the submission that liquidity requirement estimates derived from rating agencies, accounting standards, and company policies consistently supported a 'liquidity runway' of 12 to 15 months; and

(d)   Calculating the RCF component of the allowance with its updated PR24 FD inputs.

KPMG's report prepared in response to our PR24 CMA PD

7.957   Following the CMA PR24 PD – in which, for the liquidity component of the estimate, we adopted a new methodology based on multiplying a cash assumption (ie cash as a proportion of debt, 9%) with a 'cost of holding cash' assumption (1.5%) – KPMG submitted:[916]

(a)   **on the cash holding assumption** (9%), that – while KPMG's analysis adopted this CMA PR24 PD estimate – this was likely understated for two reasons. First, this cash assumption did not take account of longer term deposits which companies count in liquidity sources. Second, that historical cash balances were unlikely to be a good predictor of the future cash requirement over the price control period, given a step-change in capex over the PR24 period, ratings agencies' forward looking liquidity assessments, and companies' requirements in preparing going concern assessments; and

(b)   **on the cost of holding cash assumption** (1.5%), that a 1-month average to estimate 'the cost of holding cash' was the best predictor of the future (estimated to be 2.37% at a June 2025 cut-off, or 2.70% at a September 2025 cut-off). To estimate the cost of holding cash, KPMG used the same 'spread' as the CMA PR24 PD (ie the benchmark index adjusted for the benchmark adjustment) compared with three-month overnight SONIA rates.

Southern's request for a company-specific allowance for additional debt costs.

7.958   Following the CMA PR24 PD, Southern submitted a specific calculation of its liquidity cost allowance, based on its CMA PR24 PD financial model forecasting cash requirements over the price control period.[917]

7.959   It used its forecast liquidity requirement over gross debt to inform a Southern-specific 'cash holding assumption' of 17%.[918] This was multiplied by KPMG's one-

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[916] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, section 7.1; KPMG (2025) Analysis of WACC in the PR24 PD - databook for additional borrowing costs.xlsx, provided following Southern's response the CMA PR24 PD.
[917] Southern (2025) Response to CMA PR24 PD, pp136–138, paragraphs 7.33–7.42; Southern (2025) supporting document submission: SRN PDR - Cost of carry.xlsx.
[918] Southern (2025) Response to CMA PR24 PD, pp136–138, paragraphs 7.33–7.42.

month average of the 'cost of holding cash', submitted to be 2.70% as of a September 2025 cut-off, to give a +46bps estimate for the 'cash component' of liquidity costs.[919]

Basis risk

7.960 The two KPMG reports submitted by the Disputing Companies which accompanied statements of case argued that an additional allowance, with a point estimate of 6bps, was required to compensate companies for what is known as 'basis risk'.[920] Because both reports produce substantially similar estimates based on similar arguments, we focus on the most recent KPMG report which was prepared for the purposes of our redeterminations (rather than for response to Ofwat's PR24 DD). We then discuss further points raised in a subsequent KPMG report following the CMA PR24 PD,[921] referred to in responses from Anglian[922] and Southern.[923]

7.961 Basis risk is risk exposure caused by a 'mismatch' between an RCV linked to one inflation measure (CPIH), but embedded and new debt balances linked to others (generally RPI, but also CPI).

7.962 KPMG's analysis estimated the impacts of: (i) 'bearing' basis risk; and (ii) 'hedging' basis risk.[924]

(a) To assess the impact of 'bearing' basis risk, KPMG compared the difference in the standard deviation of equity (RoRE) returns between a notional company facing basis risk, and a notional company without it. It assessed this was 0.61% for a notional company with basis risk, versus 0.57% without it, indicating a 1.08x increase in total risk exposure. It translated this into an equity beta uplift, submitting that inflation is a macroeconomic risk factor beyond companies' control (and therefore basis risk likely has a significant systematic component). KPMG used these estimates as a 'cross check', but relied on its assessment of the cost of 'hedging' the risk (below) to estimate its proposed allowance.

[919] Southern (2025) Response to CMA PR24 PD, pp136–138, paragraphs 7.33–7.42.
[920] In the case of the assessment of basis risk, both sets of KPMG reports provided by Disputing Companies (ie submitted in response to PR24 DDs and for the purposes of our redeterminations) made substantially similar arguments and produced the same point estimates. See KPMG (2024) Estimating the Cost of New Debt and Additional Borrowing Costs for PR24 (submitted as Northumbrian SoC, Annex SOC224) pp27–35; KPMG (2025) Estimating the Cost of Capital for PR24, paragraphs 11.4.25–11.4.50.
[921] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, section 7.
[922] Anglian (2025) Response to CMA PR24 PD, p206, paragraph 570.
[923] Southern (2025) Response to CMA PR24 PD, paragraphs 7.60 –7.64.
[924] KPMG (2025) Estimating the Cost of Capital for PR24, paragraphs 11.4.25–11.4.50.

(b) To assess 'hedging' basis risk, KPMG distributed a questionnaire to seven banks to gather data on swap pricing, any illiquidity premium in the CPIH-debt market, and qualitative investor insights.

    (i) To estimate risk on embedded ILD (largely RPI-linked), it used questionnaire responses. It calculated that for RPI-CPI basis swaps for a 5-year tenor, costs on average were around 7bps, with a maximum of 12bps. It noted that embedded debt swapped to CPI would remain exposed to risk associated with the CPI-CPIH wedge. It multiplied these estimates by the notional ILD proportion (ie 33%) to give an estimated 2-3bps allowance for embedded debt.

    (ii) To assess risk on new debt, KPMG estimated the costs of: (i) directly issuing CPIH-linked debt (assessing an illiquidity premium of 9-13bps);[925] and (ii) issuing nominal – eg fixed rate – debt and entering into CPI inflation swaps, assessing this cost at 58-62bps. Based on this it proposed an overall range of 11–60bps cost and multiplied these estimates by the notional ILD proportion (33%) to give an estimated allowance of 1-6bps for new debt.

7.963 KPMG's estimated allowance for basis risk was 2–3bps on embedded debt and 1–6bps on new debt, with a total point estimate of +6bps.[926]

7.964 In the CMA PR24 PD, we set out that (i) the transition to CPIH indexation had been signalled for some time and was not unexpected by investors, (ii) KPMG's own risk modelling demonstrated a positive skew in relation to inflation exposure, and (iii) we did not see evidence of companies systematically entering into basis swaps in order to – for example – change their embedded debt profile.

7.965 Following the CMA PR24 PD, KPMG's updated report maintained this +6bps estimate, and submitted that:[927]

(a) basis risk was not likely to have been priced in to observed betas (as suggested, ie that investors had expected the transition for some time). Ofwat had committed early in the PR19 process to the CPIH transition being implemented on a net present value (**NPV**)-neutral basis. Exposure to basis risk only crystallised on the publication of Ofwat's PR24 FD in December 2024, and so – both in theory and in practice – there was not time for this to be sufficiently reflected in long-run beta averages;

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[925] KPMG submitted that there is likely to be an 'illiquidity premium' on CPIH-linked debt, because this is a relatively new form of index linked debt (as compared to RPI-linked or CPI-linked debt).
[926] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 11.4.44.
[927] KPMG (2025) Analysis of WACC in the PR24 Provisional Determination, pp31–32, paragraphs 7.2.1–7.2.13.

(b)   the P50 of basis risk was not relevant to the basis risk allowance, given that a basis risk allowance compensates investors for a wider distribution of equity returns, and inflation variance exposure is not a risk that can be addressed 'at source'. The P50 basis risk should not be isolated from other drivers of risk, and updated KPMG modelling now showed a negative P50 on basis risk specifically, as well as across the CMA PR24 PD package; and

(c)   companies had entered into significant RPI to CPI (or CPIH) swaps in order to hedge basis risk, as demonstrated in the latest APR data for half of the ten WaSCs in the sector.

Ofwat response

Issuance costs

7.966   Ofwat noted that no concerns or views had been expressed by the Disputing Companies in respect of issuance costs or its calculation.[928] Ofwat submitted that – given the potential for selectivity in statements of case – it would welcome further consideration of this issue by the CMA.[929] Ofwat made no further comment on issuance costs following our adoption of its +5bps estimate in our CMA PR24 PD.[930]

Liquidity and cost of carry

7.967   Ofwat submitted that – throughout the PR24 process – it gave significant opportunity for companies to provide evidence, from their own financing arrangements, in support of issuance and liquidity allowance requests.[931] It submitted that, despite this, no evidence was given by companies themselves[932] (ie implying that, instead, claims were primarily based on adviser reports).

7.968   Ofwat submitted that it did not agree with KPMG's assessment of the amount of cash that would be expected to be seen on company balance sheets, given that only five companies held sufficient cash balances for 12 months pre-financing at the start of FY24 (the latest complete year). Ofwat submitted that year-end data may not be typical and the cash held could be greater than normal.[933]

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[928] Ofwat (2025) Response to common issues on risk and return, paragraph 4.80.
[929] Ofwat (2025) Response to common issues on risk and return, paragraph 4.80.
[930] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraphs 5.20–5.22.
[931] Ofwat (2025) Response to common issues on risk and return, paragraph 4.84.
[932] Ofwat (2025) Response to common issues on risk and return, paragraph 4.85.
[933] Ofwat (2025) Response to common issues on risk and return, paragraphs 4.81 -- 4.82.

7.969   In respect of cost of holding cash estimates, Ofwat submitted that its estimates were comparable to KPMG's when its +30bps benchmark adjustment was accounted for.[934]

7.970   Ofwat submitted that a full and detailed assessment of reasonable – notional-like – liquidity would be necessary to establish if the claimed costs are reasonable, and it assessed that the evidence presented in the statements of case did not satisfy the evidential threshold for a different approach.[935]

7.971   Following the CMA PR24 PD, Ofwat submitted that using cash balances from a single day to calculate liquidity risked overcompensating firms.[936] Ofwat acknowledged that cash balances had increased significantly in March 2025 over previous years.[937] It considered our proposed methodology to be reasonable, but suggested that we use data from additional years in our calculations.[938]

Basis risk

7.972   Ofwat submitted that, consistent with PR19, its view was that it is not reasonable for customers to bear the claimed costs of basis risk mitigation, with these costs arising as a result of company financing and risk management choices.[939] Ofwat reiterated its assessment set out in the PR24 FD that companies did not fully engage with its assessment that the presence of fixed rate debt in the notional structure mitigates risk.[940] It submitted that – as a result of considerations relating to changed inflation expectations – there is an increased likelihood of overall benefit since its PR24 FD.[941]

7.973   Ofwat made no further comment following our assessment of basis risk – which largely aligned with its own – in our CMA PR24 PD.[942]

Our assessment and decisions

Issuance costs

7.974   Ofwat's estimate of issuance costs was based on a bottom-up assessment of average costs across the industry and was consistent with past practice. This was not disputed by the Disputing Companies, and no updated evidence or

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[934] Ofwat (2025) Response to common issues on risk and return, paragraph 4.83.
[935] Ofwat (2025) Response to common issues on risk and return, paragraph 4.86.
[936] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraph 5.22.
[937] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraph 5.22.
[938] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraph 5.22.
[939] Ofwat (2025) Response to common issues on risk and return, paragraphs 4.87–4.88.
[940] Ofwat (2025) Response to common issues on risk and return, paragraphs 4.87–4.88.
[941] Ofwat (2025) Response to common issues on risk and return, paragraphs 4.87–4.88.
[942] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraphs 5.20–5.22.

assessment was submitted to counter the approach of the PR24 FD. We continue to adopt a **+5bps** estimate for issuance costs.

Liquidity costs

Inputs to the sector wide estimate

7.975　The key differences in perspective between Disputing Companies' and Ofwat's approaches[943] – as set out in statements of case – related to: (i) the size of cash liquidity needs in various inputs to the calculation;[944] and (ii) the assumed length of time a company needs to hold cash in advance of this assessed need. Both of these directly impact the proportion (or amount) of cash held at any point in time. Following the CMA PR24 PD, Disputing Companies also placed emphasis on the length of averaging period used to assess the 'cost of holding cash'.

7.976　As in the CMA PR24 PD, we adopt an alternative approach based on outturn cash, debt and RCF data provided by companies. This simpler methodology benefits from increased transparency and also reduces circularity, ie it does not rely on finalised financial model outputs, which themselves rely on liquidity cost estimates.

Assessment of the cash component

7.977　Responding to Ofwat's submission that more years can be used in our analysis, we consider APR data from FY23 – FY25 relating to cash and gross debt balances. Table 7.27 shows average cash balances held as a proportion of gross debt, across water companies, as reported from FY23 to FY25.

Table 7.27 : Averages of cash as a proportion of gross debt, as reported by companies in APR submissions, FY23–FY25

		FY23	*FY24*	*FY25*
Mean	Industry WaSCs	6.88%	8.10%	9.71%
Mean	and large WoCs	4.50%	4.51%	8.06%
Median	Industry WaSCs	5.64%	5.35%	8.95%
Median	and large WoCs	3.59%	2.81%	8.64%

Source: CMA analysis of companies' submitted APR data, cash and cash equivalents and gross debt are sourced from Table 1E.

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[943] This includes considering KPMG's earlier report as appended to the Wessex and Northumbrian statements of case. See section '*KPMG's report prepared in response to the PR24 DD*' in this chapter.
[944] eg whether these should assess only 'liquidity runways' or also include debt refinancing needs, as set out in Ofwat's and KPMG's updated methodologies.

7.978   Table 7.27 demonstrates that both mean and median cash and cash equivalent holdings across the industry have increased significantly in FY25 as compared to the previous two years. Given the sample of companies assessed on an industry-wide basis, including considering the previous two years of data, this evidences the submission that liquidity (or cash holding) requirements have increased since Ofwat last assessed FY24 data at the time of its PR24 FD. Based on the median industry cash as a proportion of gross debt balance of 9.0%, **we adopt a 9.0% cash holding assumption**.

7.979   We estimate 'cost of holding cash' in a similar way to Ofwat and KPMG, comparing our benchmark index (including the +30bps benchmark adjustment) to three-month OIS spot rates.

7.980   We continue to adopt a **three-year average** to our cut-off (30 November 2025). As noted previously, the decision whether to use most recent data or longer-term averages depends on what we are estimating. While we consider most recent data to be the best estimate of the level of future interest rates, in the context of estimating a spread between two rates, which is then fixed over the price control period, we consider that longer term trends to be more informative. We use the most recent cash data to inform our cash holding assumption and note some uncertainty as to whether this ratio will persist over the price control period. In this context, we consider that the cost of holding cash assumption – defined as a spread between two different interest rates – should be informed by longer term averages. The three-year average of the spread between the benchmark index (including a +30bps benchmark adjustment) and OIS spot rates is **1.5%**.

7.981   The cash component of the allowance is therefore 1.5% multiplied by 9.0%, ie **13.5bps**.

Assessment of the RCF component

7.982   We received no comments on our approach to estimating the RCF component of the allowance in the CMA PR24 PD. We therefore adopt the same methodology, as set out here.

7.983   Table 7.28 shows average RCF facility sizes as a proportion of gross debt, across water companies, as reported from FY23 to FY25.

Table 7.28 : Average RCF facility sizes as a proportion of gross debt, as reported in companies' APR submissions

		FY23	*FY24*	*FY25*
Mean	Industry	10.4%	9.5%	10.4%
Mean	WaSCs and large WoCs	10.2%	9.3%	7.7%
Median	Industry	10.1%	9.2%	8.9%
Median	WaSCs and large WoCs	10.5%	10.0%	8.4%

Source: CMA analysis of companies' submitted APR data, gross debt is sourced from Table 1E, RCF facility sizes are sourced from Table 4B.

7.984   We note that differences in the way companies classify liquidity and RCF facilities in Table 4B of APR data may influence year-on-movements in average RCF facility sizes. Influenced by this, we place weight on the median RCF facilities size, and we note that the choice of median from any of the last three financial years makes very little difference to our overall estimated allowance.

7.985   We therefore assess:

(a)   industry average RCF commitment fees as reported in FY25 APR data, which give an average across all reported RCF facilities of **0.17%**;

(b)   median industry RCF facilities as a proportion of gross debt in FY25 (8.9%)[945], which inform an RCF proportion assumption of **9.0%**; and

(c)   these multiplied (ie 9.0% multiplied by 0.17%) to give an RCF component estimate of **1.5bps**.

7.986   We therefore apply a liquidity allowance estimate of **15bps (13.5bps + 1.5bps)**.

Potential for a company specific allowance

7.987   While we note that Southern's request for a company-specific liquidity cost allowance was not raised in its statement of case, we have considered its circumstances and workings submitted in light of our broader estimate and the performance of others in the industry.

7.988   We consider that our estimate sufficiently incorporates industry-wide data, including Southern's company-specific data. Disputing Companies submitted in statements of case that cash holding needs had increased significantly in the context of increased investment requirements and updated financial reporting assessments. We found evidence for this submission in updated APR data and used this to inform assumptions in our updated methodology. We consider that this updated methodology sufficiently incorporates actual company behaviour

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[945] We noted an error in one company's RCF proportion informing our CMA PR24 PD estimate. Updated for this, the median industry RCF proportion of gross debt becomes 8.9% (as compared to 7.8%) for FY25. This update makes no difference to the rounded allowance.

(reflecting considerations of liquidity) across the sector, and simplifies the approach used in Ofwat's PR24 FD which relied on financial modelling.

7.989　A range of companies will have different company-specific reasons for out- or under-performance against the allowance. In Southern's case, we find that its most recent reported cash as a proportion of gross debt was around 9%,[946] in line with the assumption that feeds into our allowance (9.0%). Southern separately requests that we estimate higher cash holding needs to create an estimate which is bespoke to Southern and its forecasts. We consider that such an approach would introduce inconsistency in our methodology and – in the context of Southern's actual performance being in line with our assumption – we do not consider this necessary.

7.990　While Southern does not request a change in policy for setting additional debt costs, we consider that granting a CSA for a large company with sufficient resources to raise debt efficiently could encourage arguments for a separate cost of debt calculation for each company in future price controls. This could both dampen incentives to raise debt efficiently, and increase the complexity (reducing the transparency) of the price control framework.

7.991　We therefore continue to adopt a sector-wide estimate based on sector-wide data.

Basis risk

7.992　We maintain our view that regulated water companies' exposure to inflation is significantly more favourable than for companies operating in competitive markets, given that indexation of the RCV is embedded into the price control framework.

7.993　We also continue to consider that the transition to full CPIH indexation of the RCV has been signalled for some time, and is not unexpected by companies or their (prospective) equity investors, and should by now be 'priced in' to betas, to the extent any of this risk is systematic, given that Ofwat's position on basis risk has been consistent since it set its PR24 methodology.[947]

7.994　Further, with RPI converging with CPIH from 2030, any residual basis risk is temporary and is likely to be decreasing over time. In addition, as discussed in chapter 8 (Risk and return), the overall exposure to inflation is expected to be positive.

7.995　KPMG's observation that some companies have chosen to enter into RPI-CPI swaps is not sufficient evidence that it is a cost we should include for the notional

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[946] Southern (2025) APR data tables, Table 1E.

[947] See Ofwat (2022) PR24 final methodology: appendix 11, Allowed return on capital, pp 84–85; Ofwat (2024) PR24 draft determination: Aligning risk and return – Allowed return appendix, pp82–83.

company. This is a treasury and risk management decision, the costs and risks of which should sit with shareholders.

7.996 In these contexts, we continue to consider it inappropriate to increase costs to customers for a feature of the price control framework which may feasibly benefit shareholders, or be broadly risk neutral. We therefore apply no allowance for basis risk.

Decision on additional debt costs

7.997 For these final determinations, we set an allowance for additional debt costs of **+20bps**. This comprises:

(a) an issuance allowance of **+5bps**; and

(b) a liquidity allowance of **+15bps**.

Overall allowed return on debt

7.998 Our decision is to set a real allowed return on debt of 2.97% (representing a nominal return of 5.44%, estimated using our 2.4% CPIH assumption), as shown in Table 7.29 below.

Table 7.29 : CMA's final determination on the allowed return on debt

	Nominal	CPIH-real
Long-term CPIH Inflation assumption	N/A	2.40%
Cost of embedded debt	4.84%	2.38%
Cost of new debt	6.27%	3.78%
Share of new debt	28%	28%
Cost of debt (excl additional borrowing costs)	5.24%	2.77%
Additional borrowing costs	0.20%	0.20%
Cost of debt	5.44%	2.97%

Source: CMA analysis

Company specific adjustment

Introduction

7.999 At a number of previous price controls, qualifying small companies have received an uplift to their allowed return on debt, known as a company specific adjustment (CSA).[948] This has been based on evidence that – as a result of size factors

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[948] Known as a small company premium prior to PR19.

largely outside of management control – smaller companies face structurally higher debt costs. South East has not had a CSA applied since PR09.[949]

7.1000 South East asked the CMA to apply a CSA to its cost of embedded debt because – it submits – it is an infrequent debt issuer. In this section, we outline Ofwat's approach to CSAs at the PR24 FD, South East's and Ofwat's submissions, before setting out our assessment and decision on whether to provide an allowance.

Summary

7.1001 We recognise South East's relatively infrequent debt issuance profile, and that this may have historically exposed it to greater point-in-time risk when issuing debt (given market interest rate fluctuations). However, we do not apply an adjustment to South East's cost of embedded debt. This is primarily because we consider that these risks have been historically allocated to shareholders. We therefore do not consider it appropriate to apply a forward-looking adjustment to allowed returns to compensate for these past risks. We also do not consider that the claimed past risks are undiversifiable (ie likely to impact beta and therefore the allowed return).

Ofwat's PR24 FD approach

7.1002 Ofwat's methodology applied to two broad 'tests' to water companies' applications for a CSA.[950]

(a) **Level of uplift assessment:** requiring companies to demonstrate evidence of additional financing costs – relating to size rather than factors within management control – which might reasonably be faced by a notional small company. This was also subject to a sense check that the relevant company faced higher actual costs than sector benchmarks.

(b) **Customer support assessment:** companies' requests needed to be accompanied by high quality, compelling evidence that their customers supported funding an uplift.

7.1003 Ofwat used these tests to assess submissions by Portsmouth Water, South Staffordshire Water plc (**South Staffordshire Water**), SES (with a CSA no longer needed following its acquisition by Pennon), and South East.[951]

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[949] (Non-confidential) transcript of the hearing for Risk & Return (day 1) on 1 July 2025, pp149, line 26 to p150, line 6.
[950] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p105.
[951] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p105.

Ofwat's assessment of South East

Level of uplift assessment

South East's submissions to Ofwat

7.1004 Ofwat assessed South East's claim for a 30bps uplift to its overall cost of debt (comprised of an adjustment to both embedded and new debt), on the basis that it is an infrequent debt issuer.[952]

7.1005 South East relied on analysis submitted in a report by KPMG,[953] which made a number of similar arguments to those set out in the report submitted for the purposes of our redeterminations (summarised in a later section).

7.1006 In respect of embedded debt, KPMG used three broad approaches to estimating a proposed adjustment.[954] One of these approaches used a simulation to estimate the difference in standard deviation of RoRE between notional frequent and infrequent issuers (similar to the approach adopted in the KPMG report submitted to us, discussed below).[955] This estimated a total CSA of between 16bps (using Ofwat's risk ranges) and 38bps (using KPMG's risk ranges).[956]

Ofwat's assessment

7.1007 In its PR24 FD and in respect of KPMG's simulation-based estimate, Ofwat found that this was based on a 'chain of contentious assumptions', required to link KPMG's simulation modelling of the cost of debt and equity beta.[957]

(a) Ofwat found that KPMG's simulation involved a mismatch of time periods (ie conducting a simulation based a 20-year cost of debt simulation and assuming that this affects 5-year RoRE and daily-level stock returns), and it ignored that companies' embedded debt is fixed going into the five-year price control period, so there is no return distribution relating to frequency of issuance in the embedded debt allowance for the PR24 control period.

(b) Ofwat discussed that – even if it were to put these factors aside and accept that infrequent debt issuance increases the standard deviation of daily returns – KPMG had not adequately demonstrated that this would increase beta, ie it had not demonstrated that the increase in volatility of returns was

[952] Ofwat (2024) Draft Determinations: Aligning risk and return: Allowed return appendix, p86.
[953] KPMG (2024) PR24 DDs: Cost of debt – Company Specific Adjustment- Prepared for South East Water.
[954] KPMG (2024) PR24 DDs: Cost of debt – Company Specific Adjustment- Prepared for South East Water, p20.
[955] KPMG (2024) PR24 DDs: Cost of debt – Company Specific Adjustment- Prepared for South East Water, p20.
[956] KPMG (2024) PR24 DDs: Cost of debt – Company Specific Adjustment- Prepared for South East Water, p20.
[957] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p109, pp131–133

due to an increase in the covariance with the market or a decrease in the market volatility (the two factors which define the beta).

(c)   Ofwat set out that – under KPMG's simulations – there was no evidence that infrequent issuance changed the expected performance against the sector cost of debt allowance, but only the distribution of outcomes at long-horizons.

7.1008 Additionally, Ofwat also observed that:[958]

(a)   South East did not request an CSA at PR19, and at PR04 it had the lowest CSA in the sector (of 10bps), as one of the largest small companies;

(b)   similarly sized Affinity had a cost of embedded debt anticipated to be below the allowance for 2025-30, indicating that South East's projected underperformance might be due to previous management decisions rather than structural factors related to its size; and

(c)   South East's submissions were difficult to reconcile with its decision since 2004 to maintain a gearing level above 70%. Ofwat set out that this level of gearing was significantly above the level of the notional company in subsequent price controls, as well as being above sector average.

7.1009 Ofwat also did not accept South East's arguments for an uplift on the cost of new debt.[959]

7.1010 On the basis of these considerations, Ofwat determined that South East did not pass the 'level of uplift' assessment.[960]

Customer support assessment

7.1011 In its PR24 DD, Ofwat assessed that South East did not present compelling evidence that its customers supported funding its proposed bill uplift.[961]

7.1012 Ofwat noted in its PR24 FD that South East had not supplied further representations or evidence relating to its assessment of customer support.[962] It determined that it did not pass this aspect of the CSA assessment.[963]

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[958] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p106, Ofwat (2024) Draft Determinations: Aligning risk and return: Allowed return appendix, p92.
[959] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p110.
[960] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, Table 25, pp111–112.
[961] Ofwat (2024) Draft Determinations: Aligning risk and return: Allowed return appendix, p93. Ofwat estimated the bill impact of South East's request to be approximately £3.40 per household per year. It assessed that (i) only a slim majority (54%) of the surveyed sample found a £4 bill impact to be acceptable; and (ii) (b) the wording of the question used to establish support was potentially misleading, as it implied that providing the uplift would make the company 'resilient to any potential future shocks', which was too strong a claim.
[962] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p108.
[963] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, Table 25, pp111–112.

Parties' submissions

South East

7.1013 During our redeterminations, South East requested an adjustment only to its cost of embedded (rather than new) debt of +30bps. It requested that the CMA consider whether an industry-average approach to setting the allowance for embedded debt is appropriate in its different circumstances, as a relatively small company that issues debt relatively infrequently.[964]

7.1014 South East submitted a report, written by KPMG, which conducted simulation-based analysis to assess an appropriate infrequent issuer premium.[965]

The premise of KPMG's report and the definition of an infrequent issuer

7.1015 KPMG's report presented analysis which set out that:

(a) infrequent issuers need to wait to allow requirements (ie capex and refinancing) to build to a sufficient size to issue 'benchmark-level' debt. KPMG defines this as £150 million from FY2000 – FY2010, and £250 million thereafter,[966] because – it submitted – this is the threshold for inclusion in the iBoxx benchmark index, and financing strategies have recommended this is the minimum efficient size to optimise pricing tension, flexibility and execution risk on public bond issuances.[967] Because of this need to 'build up' to benchmark level issuances, KPMG set out that each debt issuance represents a more material proportion of the debt book, and has a more material impact on the cost of debt;[968] and

(b) as a result of these factors (ie limited control over capex and refinancing needs, and the need to 'build' to benchmark-level issuance), infrequent issuers have less control over timing of issuance and are more exposed to 'point in time' risk. This means that infrequent issuers are more likely to issue debt at higher or lower cost than the sector average, because they are more exposed to the prevailing interest rate environment at the time of each (infrequent) issuance.[969]

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[964] South East SoC, p83, paragraph 6.34.
[965] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium.
[966] KPMG define 'benchmark level' issuances as £150 million from FY2000 to FY2010, and £250 million thereafter, as it submits that the benchmark size for inclusion in the iBoxx GBP indices was raised from £100 million to £250 million on 31 December 2010, and in the later years a higher amount was required to optimise liquidity and was more consistent with prevailing issuance sizes. See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp21–22.
[967] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p19.
[968] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp19–20.
[969] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp23–26.

7.1016 KPMG conducted analysis using a 25 year look-back period (2000 – 2025) to assess the notional capex and refinancing needs (ie debt issuance needs) of all WaSCs and large WoCs, for each year, over this time.[970] It assessed the implied frequency of issuance, by assessing the time taken – on average – for each company to be able to issue debt at 'benchmark size'.[971] Based on this, it assessed that South East, Affinity and others meet the definition of being notional 'infrequent issuers'.[972] In its simulation assessment (set out below), KPMG defined an infrequent issuer as being a company which issues benchmark-level debt less frequently than once per year.[973]

KPMG's simulation assessment

7.1017 KPMG submitted that the interest rate risk that South East was exposed to has a systematic component and should be priced.[974] KPMG conducted a simulation to assess the difference in financing risk exposure between a notional frequent and infrequent issuer.[975]

(a) A simulation was conducted for two notional companies: one frequent issuer (ie issuing at benchmark size annually) and one infrequent issuer (ie issuing benchmark sized debt less frequently than annually, assumed to be every 3 years). Assumed debt costs were aligned with the benchmark index on the date of issue, and interest payments and debt balances were calculated over a 20-year tenor. The annualised cost of debt for each issuer was determined as the cumulative annual interest payment divided by the total debt balance at the end of the 20-year period. This analysis was run for 2,000 simulations. KPMG submitted that its results demonstrated the notional infrequent issuer faces a significantly greater spread of embedded debt costs, from just over 4.00% to just under 5.60%, whereas the notional frequent issuer saw embedded debt costs in the range of 4.5% to 4.85%, with significant distribution around the middle of the range.

(b) KPMG translated these results into estimated volatility in RoRE, which it submitted were controlled for factors such as credit rating and gearing.[976] It submitted that its results indicated that being an infrequent issuer would increase the RoRE (%) P10-P90 risk range by 59bps.[977] Based on a 1.09x

[970] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp26–27.
[971] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp26–27.
[972] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p27, Table 2.
[973] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p34.
[974] KPMG assessed that South East was exposed to higher interest rate risk as a result of a requirement to issue at least benchmark size, the higher materiality of each – infrequent – issuance to its smaller total debt balance, and its lower scope to spread maturity concentration and manage refinancing risk. See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp30–31.
[975] See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp34–35.
[976] See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p37.
[977] See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp38–39.

increase to the standard deviation of expected returns, KPMG applied a 1.09x increase to the notional infrequent issuer's equity beta.[978]

(c)   Working from the impact on overall WACC, KPMG submitted that its analysis implied an uplift to embedded debt of +35bps.

KPMG's response to Ofwat's assessment

7.1018 Ofwat assessed in its PR24 PD that similarly sized Affinity's low embedded debt cost suggests that South East's expected underperformance may be due to previous management decisions rather than size-factors.[979] KPMG assessed that Affinity's relatively low cost of embedded debt – compared to the sector average – was essentially a result of it having benefited from the 'upside' of increased exposure to point-in-time risk.[980] KPMG set out that a significant proportion of South East's debt was raised before or during the GFC (2002 – 2006, and 2010), but Affinity had raised more debt after this period, when interest rates were lower.[981]

7.1019 In response to Ofwat's assessment that South East had maintained high gearing over a long period, KPMG conducted a simulation involving two scenarios: (i) the factual scenario where South East increased gearing to actual levels from 2004, and (ii) the counterfactual scenario where South East increased gearing to notional levels from PR99 to PR19. On the basis of this analysis, KPMG estimated the impact of gearing on South East's achieved embedded cost of debt to be up to 13bps.[982] In response to Ofwat's PR24 FD assessment that it does not follow that all of the remainder of any difference can be attributed to factors outside of company control, KPMG submitted that its core analysis focused on the notional infrequent issuer (rather than a comparison of actual company costs) as its primary approach.[983]

7.1020 In response to Ofwat's finding that KPMG had not adequately demonstrated that increased volatility of debt cost outcomes would increase beta, KPMG submitted that a mathematical formulation is not necessary to demonstrate this point. It set out that imprecision in the ability to quantify this based on unknowable data does not negate the existence of the risk – ie that it follows that market-based interest rate variability is driven by macroeconomic factors.[984]

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[978] See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp38–39.
[979] Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p106.
[980] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp31–32.
[981] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p31.
[982] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp32–33.
[983] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp32–33.
[984] KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, p41.

7.1021 Following hearings with us and Ofwat, South East submitted that it considered that:[985]

    (a)   a portfolio of companies with infrequent issuance profiles would not diversify the higher risk associated with infrequent issuers for investors. This is because the issuances across the portfolio cannot be coordinated to replicate the issuance profile of one frequent issuer; and

    (b)   higher risk arising from infrequent issuance could not be diversified by constructing a portfolio including both frequent and infrequent issuers, because returns of frequent issuers are not negatively correlated with those of infrequent issuers. South East did not provide further evidence to substantiate this.

7.1022 In response to our CMA PR24 PD, in which we provisionally decided not to allow a CSA, South East submitted that:[986]

    (a)   we had treated Ofwat's 'one-size-fits-all' (ie industry wide allowance) approach to setting companies' allowed cost of debt as fixed, and had not considered inherent drawbacks in this methodology;

    (b)   we placed weight on South East not having received a CSA at PR19, although it had consistently submitted evidence supporting a CSA since PR99;

    (c)   in considering average issuance sizes across the sector, our analysis was distorted by the inclusion of lease instruments, and did not account for tap issuances or issuances split into multiple tranches; and

    (d)   there was no basis for our 'dismiss[ing]' higher point in time risk as diversifiable in nature, given that the underlying source of risk is the interest rate cycle, ie a key part of systematic risks faced by global equity investors.

Ofwat response

7.1023 Ofwat submitted that it did not agree with South East's argument that underperformance on embedded debt is mainly due to factors outside of company control.[987] It set out that companies maintain significant control over drivers of yield such as timing and tenor, and can choose financial structures that do not result in being assigned a low credit rating.[988]

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[985] South East (2025) Response to Hearings (non-confidential), p5.
[986] South East (2025) Response to CMA PR24 PD, p95, paragraph 6.41.
[987] Ofwat (2025) Response to common issues on risk and return, paragraph 7.19.
[988] Ofwat (2025) Response to common issues on risk and return, paragraph 7.19.

7.1024 In respect of South East's question as to whether an industry-average approach is appropriate (in its own circumstances), Ofwat submitted that it considered that a mechanistic sharing mechanism for underperformance would dilute incentives to issue debt efficiently and expose customers to the cost of high-risk financial structures.[989] Ofwat submitted that while it fundamentally disagrees with the adoption of such a policy, if such a policy were adopted it should apply symmetrically to all companies.[990]

7.1025 Ofwat submitted that arguments from KPMG's RoRE-based simulation analysis had already been addressed. Ofwat set out that:[991]

(a) there was a time horizon mismatch between KPMG's 20-year embedded debt cost simulation and its input into a 5-year RoRE model for 2025 – 30; and

(b) differences between actual embedded debt cost and the embedded debt allowance were not a driver of RoRE risk over the price control period, because both the allowance for embedded debt and actual embedded debt costs are fixed (ie known) at the start of the AMP.

7.1026 Ofwat set out that it rejected the broader premise that RoRE volatility must necessarily increase beta. Using the formula for deriving beta estimates,[992] Ofwat set out that KPMG's analysis assumed that higher volatility in RoRE could cause the numerator of the formula to increase. Ofwat submitted that KPMG had not demonstrated either empirically or through reasoned argument why higher volatility must increase covariance with the market portfolio. Responding to KPMG's assessment that higher variance in expected returns intuitively increased beta, Ofwat said that it is not intuitive why this kind of risk cannot be diversified – eg through forming a portfolio of investments with exposure to debt that complements that of the infrequently issuing company.

7.1027 Ofwat referenced adoption of 'an aggressive financing structure' by South East in 2004, submitting that this had constrained its ability to issue debt more frequently.

7.1028 Ofwat discussed its customer support assessment for South East, submitting that this was designed to provide protection to the company's customers analogous to that in a competitive market. It submitted that it had identified no information in

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[989] Ofwat (2025) Response to common issues on risk and return, paragraph 7.19.
[990] Ofwat (2025) Response to common issues on risk and return, paragraph 7.19.
[991] Ofwat (2025) Response to common issues on risk and return, paragraphs 7.20–7.22.
[992] Ofwat set out the formula for deriving beta estimates as $\beta_i = \frac{Covariance\ (i,m)}{(\sigma_m)^2}$ where i = water stock returns, m = market returns, and $(\sigma_m)^2$ = the variance of market returns. See Ofwat (2025) Response to common issues on risk and return, paragraph 7.23.

South East's statement of case which would alter its view set out in the PR24 FD.[993]

7.1029 In response to our CMA PR24 PD, Ofwat submitted that it supported our assessment and reiterated many of the arguments set out above.[994] In addition, it highlighted that Ofgem's RIIO-3 draft determinations had discontinued the infrequent issuer allowance set at RIIO-2. This was – Ofwat submitted – given that Ofgem's cost of debt calibration relies on granular debt instruments, and there was a risk of an additional infrequent issuer allowance overcompensating companies (ie double counting).[995] Ofwat submitted that – given it uses a similar approach to setting the cost of embedded debt – similar arguments apply.[996]

Our assessment and decision

7.1030 We retain our view as set out in our CMA PR24 PD that – in principle, before considering any further arguments – it is inappropriate to increase future costs to customers for past risks already allocated to shareholders.

7.1031 We expect that the company-specific circumstances of a number of water companies may lend themselves to similar arguments to those presented by South East, ie that various factors have affected the volatility of returns, and these should be compensated for in the forward looking period (we note that South East submitted that it expected to be a more frequent issuer going forwards, and so did not request an uplift to new debt).[997]

7.1032 Adopting the approach suggested by South East risks opening the possibility of ex-post adjustments to forward looking returns, based on particular risks which have crystallised not in companies' favour. We continue to consider that this would risk inappropriately increasing costs to customers for historical downside risk (and upside potential) which has already been borne by shareholders.

7.1033 As regards the submission that an industry-wide allowance represents a 'one-size-fits-all' approach, we do not agree with this characterisation. An industry wide allowance is a policy choice we deliberately adopt, recognising that there may be out- and underperformance against the allowance for a variety of company specific reasons. A single allowance for WaSCs and large WoCs is an appropriate approach in the round, as it incentivises efficient debt issuance and limits the impact of company-specific financing choices on customers.

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[993] Ofwat (2025) Response to common issues on risk and return, p143, paragraph 7.25.
[994] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, p41, paragraphs 6.2–6.3.
[995] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp41–42, paragraph 6.4.
[996] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, pp41–42, paragraph 6.4.
[997] This is in contrast to its submissions during the PR24 process, as set out above. See South East SoC, p83, paragraph 6.36, footnote 129.

7.1034 Further, the embedded debt allowance is also constructed using a median of company-by-company actual costs for WaSCs and large WoCs, drawing on a range of companies of different sizes, with different debt issuance profiles (considering frequency, issuance sizes and instrument types ie bonds, finance leases, bank loans). We therefore consider that – to extent any premium exists for less frequent issuers who issue 'benchmark level' (£250 million) debt less than annually – this is sufficiently captured in construction of the allowance.

7.1035 Putting these principles aside, we continue to have reservations about KPMG's approach, as set out in the CMA PR24 PD. In assessing South East's submissions and KPMG's report, we have considered: (i) whether South East is a relatively infrequent issuer, on an 'actual' and 'notional' basis; and (ii) if so, whether it is appropriate to make an adjustment to forward-looking equity returns, translated into an adjustment to the allowed return on embedded debt.

South East's 'actual' and 'notional' debt issuance profile

7.1036 Considering South East's embedded debt profile, we acknowledge that the instruments materially driving its expected underperformance against the allowance were raised in or before 2010, ie before and during the GFC.[998] We consider that South East may have been able to outperform the allowance had it raised more of its debt after 2010. However, this is also true for much of the industry. Based on the updated embedded debt model, around 36% of the total principal outstanding over AMP8 was raised in 2010 or before.[999] As set out above, making specific adjustments for South East's issuance profile would represent a policy shift away from an allowance based on median debt costs (ie it could require similar adjustments for a range of companies with varied debt profiles, influenced by a range of company-specific factors within and outside of management control). As noted, we consider that this risks dampening incentives to raise debt efficiently and inappropriately charging customers for company-specific financing choices.

7.1037 We also acknowledge that South East has raised debt relatively infrequently, and it has a small number of instruments forming its total debt balance, meaning that each debt instrument has a greater impact (than for larger companies with more instruments). However, in the context of the embedded debt methodology, we find limited usefulness in KPMG's simulation which relies on water companies needing to 'build up' refinancing and capex requirements to benchmark-level issuance. KPMG's simulation depends on the assumption that companies must make issuances of £250 million since 2011 (£150 million in earlier years of the

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[998] Based on South East's APR data submissions and our updated cost of embedded debt model, we estimate that the nominal 'all-in' cost of South East's qualifying instruments raised before 2010 is 6.04%, and the nominal 'all-in' cost of qualifying instruments raised from 2011 onwards is 4.14%. These compare to an embedded debt allowance of 4.84% (under our updated estimate).
[999] CMA analysis of updated estimates using Ofwat's published model: Ofwat (2024) PR24-FD-RR02-Cost-of-debt.xlsx.

simulation). It submitted that this is the threshold for inclusion in the iBoxx benchmark index, and that financing strategies have recommended this is the minimum efficient size to optimise pricing tension, flexibility and execution risk on public bond issuances.[1000] However, we note the following.

(a) The embedded debt allowance, using our methodology, is primarily constructed based on median 'actual' debt costs across the industry assessed on a company-by-company basis: incorporating bonds, private placements, finance leases, bank loans and a range of debt instruments of different sizes. In other words, the primary estimate is not based on only bonds which are included in the benchmark index, but all qualifying WaSC and large WoC debt issuances, of all sizes, contribute to each company's cost of debt. The median of a range of larger and smaller companies' costs of debt informs the allowance. In response to updated analysis of average issuance sizes from South East, we note that including finance leases in our CMA PR24 PD assessment of average issuance sizes was by design, ie it demonstrates that the allowance is constructed using a range of instruments. The reason for any need to match 'benchmark' issuance size (to align with an allowance which is not itself primarily based on a benchmark index) is therefore unclear.

(b) In response to a question from us on documentary evidence used to substantiate that benchmark-level, £250 million, issuances represent the 'minimum' efficient size to optimise pricing, South East sent copies of two emails from debt investors, in response to a specific request from South East (written after our request for information, rather than feeding into KPMG's report).[1001] We do not consider that this sufficiently evidences that £250 million issuances are required to achieve interest costs in line with the embedded debt allowance.

7.1038 We therefore acknowledge South East's relatively infrequent issuance profile, meaning that the materiality of its relatively expensive embedded debt raised before the GFC is more significant than for others in the industry. However, we consider that a number of companies diverge from the median (ie outperform or underperform the allowance) for a variety of company-specific reasons. Forming an allowance based on median (rather than company-specific) embedded debt costs remains a deliberate policy choice we adopt to incentivise efficient debt issuance. We also consider that KPMG's analysis – which relies on companies needing to issue facility sizes of at least £250 million (£150 million in earlier years) – does not reflect the way in which the allowance itself is set, meaning that the

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[1000] See KPMG (2025) PR24 cost of debt: analysis of the infrequent issuer premium, pp13 and 19.
[1001] South East response to South East RFI06, Q4.

reason for a need to wait until financing requirements reach 'benchmark size' is unclear.

The appropriateness of an adjustment to the allowed return

7.1039 Based on our assessment that South East has issued debt relatively infrequently, we consider that it is likely that South East has faced greater point-in-time risk at the times that it has needed to raise debt finance. This may have increased the potential volatility of returns to its shareholders in previous periods. As set out above, we consider that many companies would have faced company-specific factors impacting returns in previous price controls, and have in-principle concerns about adjusting forward looking returns for past risks already allocated to shareholders. However, putting this aside, we continue to consider that this increased volatility is diversifiable (ie -non-systematic). While continuing to reference the interest rate cycle, we note that South East has submitted no further evidence to counter our view.

  (a)   In addition to capex and refinancing needs, exposure to point-in-time risk will also be linked to treasury policy and financing choices (ie whether to raise funding needs through debt or equity), which we expect to be largely driven by management decisions.

  (b)   Our WACC, and beta estimates, rely on the assumption that equity investors invest in widespread portfolios representing companies in a range of industries and geographies, and that impacts of idiosyncratic factors (such as frequency of debt issuance, even if companies are – to some extent – limited in their control over this) are diversified away.[1002]

7.1040 We therefore do not consider it reasonable to assume that increased simulated standard deviation in past RoRE returns can translate to an increase in expected beta.

7.1041 For these reasons, ie (i) that it is inappropriate for customers to bear the costs arising from past risks allocated to shareholders, and (ii) that it is unclear that these past risks – in any case – are undiversifiable, we consider it inappropriate to make an adjustment to South East's beta estimate (translated to an embedded debt adjustment).

[1002] In other words, we consider that investors are likely to construct portfolios with a range of issuance profiles, as well as other company-specific features, rather than a portfolio of infrequent issuers, as primarily suggested by South East when discussing whether the risk is undiversifiable.

Conclusion on a CSA for South East

7.1042 In respect of a 'level of uplift' assessment, we therefore determine that it is inappropriate to provide an adjustment to South East's cost of embedded debt.

Retail margin adjustment

Summary

7.1043 We retain our provisional position and remove the retail margin adjustment given the lack of evidence that there is a double count of returns across the wholesale and retail price controls combined.

Introduction

7.1044 Prior to PR14, water companies earned an allowed cost of capital on the total assets of the integrated water business. At PR14, Ofwat adopted a new approach when it set separate price controls for wholesale and retail businesses for AMP6.

7.1045 One of the challenges of separating the two price controls was the allocation of the RCV from the start of PR14. Ofwat decided that existing fixed assets used to provide retail activities would remain in the wholesale RCV. The effect of this was that return on retail investments made by the companies before the start of PR14 were paid for through PR14 wholesale revenues.

7.1046 Ofwat said that, over time, the retail business would build up its own assets, and the legacy retail assets in the RCV wholesale would depreciate away.[1003] The period of this depreciation would be shorter for retail assets as, unlike a wholesale business which had significant long-lived tangible assets, a retail business was more asset light. Ofwat assumed that all retail fixed assets in the wholesale RCV were fully depreciated by 2020.[1004]

7.1047 Ofwat calculated its PR14 retail control allowances by adding together operating costs and a net margin. The allowed margin was calculated by benchmarking against retail margins in other sectors[1005] and was determined to be 1.0% for household retail. At PR19, Ofwat retained the 1.0% retail margin.

7.1048 Ofwat explained that, since the retail business generated positive margins, this represented a return on the RCV which should be netted off the WACC to give a

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[1003] Ofwat (2014) Setting price controls for 2015-20 – risk and reward guidance, p34
[1004] Ofwat (2019) PR19 final determinations: Allowed return on capital technical appendix, p14.
[1005] These margins were taken from other regulatory determinations. See Setting price controls for 2015-20 – risk and reward guidance, p28, Figure 6.

wholesale WACC. Ofwat said this would ensure that returns on notional retail assets were not included twice (in both the retail margin and the WACC).[1006]

7.1049 In its PR14 final determination, Ofwat made a 14bps deduction for the retail margin adjustment from the allowed return on the wholesale RCV to avoid double counting.

7.1050 At PR19, the wholesale RCV was effectively free of retail assets. However, there was still a potential double count issue. This is because, in Ofwat's view,[1007] the retail margin could be conceived as covering three financing cost items:

(a)   required return on fixed assets;

(b)   required return on working capital; and

(c)   required return to compensate for additional systematic risk.

7.1051 While items (a) and (b) were no longer double-counted in the Appointee-level WACC, item (c) was potentially included twice since the Appointee-level WACC (applied to the wholesale RCV) compensates both for the risks of the wholesale and the retail business. Ofwat made a 4bps deduction for the RMA, to account for this double-count issue.

7.1052 The CMA has previously considered the RMA issue in the PR14 redetermination for Bristol Water and in PR19 redeterminations. In PR14, the CMA started with the principle that dividing the existing company into parts should not affect either its profitability or its returns.[1008] In PR19, the CMA repeated this principle, and also noted that the financing of the Appointee remains integrated in the real world, and that customers should not bear any additional costs as a result of the notional separation.[1009] In the PR19 Final Report, the CMA also considered that Return on Capital Employed (ROCE) was an appropriate approach to assessing the returns of an asset-light business when the retail business is essentially a physical interface with customers which does not add any material risk to the group. [1010]

Ofwat's PR24 FD approach

7.1053 In its PR24 FD, Ofwat set the retail margin at 1.5%. Ofwat's retail margin of 1.5% was based on a bottom-up calculation and a cross-check against top-down benchmarks. First, the bottom-up calculation included estimates for the required

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[1006] Ofwat (2014) Setting price controls for 2015-20 – risk and reward guidance, p34.
[1007] Ofwat (2019) PR19 final determinations: Allowed return on capital technical appendix, p14.
[1008] CMA (2015) Bristol Water plc: A reference under section 12(3)(a) of the WIA91 - Report, p.262, paragraph 10.218.
[1009] CMA (2021) PR19 Final Report, p1026, paragraph 9.1140.
[1010] CMA (2021) PR19 Final Report, p1027, paragraph 9.1143(d).

revenue for return on retail fixed assets, an estimated revenue for return on working capital and a return for retail systematic risk.

7.1054 Second, Ofwat considered a number of other retail margins. These margins for energy retailers typically range from 1.25% to 2.60% with an average of 1.8%. Ofwat noted that the top-down estimates from other sectors were not directly comparable as benchmarks to compare against the water retail margin, as the retail comparators used are mostly deregulated, and thus demand risk will represent a significant component of these estimates (and water companies do not face demand risk).[1011]

7.1055 Ofwat said the increase since PR19 in the retail margin was due to a change in its approach to creditor balances and using updated company data on fixed assets and working capital costs.[1012]

7.1056 Ofwat explained that in order to determine the allowed return for wholesale controls an adjustment must be made to the Appointee allowed return to remove the impact of the allowed retail margin, using similar reasoning to PR19.

7.1057 Ofwat stated that it compensates water companies for systematic (ie non-diversifiable) risk through supplying an equity beta input to the CAPM that is derived from Appointee-level data – ie reflecting risk from all controls, including retail. Because the retail margin also provides compensation for systematic risks faced by the household retail control, allowing companies both return allowances would double-count this compensation.

7.1058 Ofwat said that to correct for this, it applies an RMA to the Appointee WACC to ensure that companies are only compensated once for bearing systematic household retail risk. This involved deducting the allowance corresponding to systematic retail risk compensation from the Appointee WACC, where this is estimated as the part of retail margin revenues not assigned to financing fixed capital costs and working capital.[1013]

7.1059 In the PR24 FD, Ofwat calculated the RMA, the required return for retail systematic risk to be deducted from the Appointee WACC, to be 0.06%.[1014]

[1011] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p125.
[1012] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p124.
[1013] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p122.
[1014] Ofwat (2025) final determinations: Aligning risk and return – allowed return appendix, p124.

Parties' submissions

Disputing Companies

7.1060 Northumbrian stated that Ofwat was wrong to round the retail margin from 1.53% to 1.50% in its financial model, and the CMA should use the unrounded figure.[1015]

7.1061 None of the other Disputing Companies challenged Ofwat's retail margin of 1.5%. The arguments presented below are all in relation to the RMA applied to calculate the wholesale WACC.

7.1062 Anglian submitted that the RMA should be removed. Anglian stated that Ofwat's approach to the adjustment is internally inconsistent: either the retail business is part of an integrated Appointee, in which case the whole capital base should be funded in line with the Appointee WACC (at a minimum); or it is standalone, in which case, its financing cost would be much higher, considering its lack of RCV.[1016]

7.1063 Northumbrian[1017] and Wessex[1018] noted that Ofwat had confirmed that it had made an unambiguous error in the modelling of the RMA which resulted in an RMA of 6.0bps rather than 5.5bps. Northumbrian and Wessex requested that the CMA address this error in our redeterminations.

7.1064 Southern stated that Ofwat's PR24 financial model indicates that (1) notional gearing is set for the Appointee; and (2) the notional company raises debt up until notional gearing to support only the RCV. This means that the retail business for the notional company cannot be financed with debt as otherwise Appointee gearing would increase above the notional level. Southern argued that in consequence, the retail business must be financed with equity and therefore at the Appointee cost of equity.[1019]

7.1065 Southern also submitted that Ofwat's calculation includes the revenue on DPC[1020] and SIPR[1021] assets but excludes the cost of financing these fixed assets, as these are mechanisms of capital delivery through off-balance sheet methods.[1022]

[1015] Northumbrian SoC, Appendix 1: Supporting information, paragraph 210.
[1016] Anglian SoC, p205, paragraph 798–799.
[1017] Northumbrian SoC, Appendix 1: Supporting information, paragraph 209.
[1018] Wessex SoC, p90, paragraph 10.12(f).
[1019] Southern SoC, p456, paragraphs 276–277.
[1020] Direct procurement for customers is an alternative approach, through competitive tendering, for water companies to deliver large scale, discrete programmes of work by means of a third party, which potentially may include the design, construction, financing, ownership, operation and maintenance of an asset.
[1021] Specified Infrastructure Project Regulations, secondary legislation made under the Water Industry Act 1991 making provision for a delivery mechanism for large schemes that extend beyond a single AMP.
[1022] Capital delivery through DPC and SIPR are delivered through third parties and the corresponding assets are not reflected on the balance sheet of the Appointee, whereas the revenues related to these assets are collected by the Appointee.

Southern stated that revenue and costs for DPC and SIPR assets should be reflected in the calculation of the RMA.[1023]

7.1066 KPMG stated that the application of the RMA is heavily reliant on certain key assumptions. KPMG noted that Ofwat assumes that (1) the systematic risk of retail activities is higher than that of wholesale activities, and (2) the risks associated with retail activities are fully reflected in the allowed retail margin. KPMG explained that if the first assumption did not hold, the wholesale WACC would be equal to or higher than the Appointee WACC, and if the second assumption did not hold, the margin would be understated, thereby reducing the potential for double-counting.[1024]

7.1067 Anglian[1025] and Southern[1026] submitted that they supported the CMA's provisional decision to remove the RMA. However, both Disputing Companies requested that the CMA recognises that the retail business should be financed at the Appointee cost of equity, not the Appointee WACC, noting that the retail business cannot be financed with debt as Appointee gearing would increase above the notional level.[1027]

Ofwat

7.1068 Ofwat stated that Southern's issues concerning the RMA are also indirectly issues relating to the bottom-up calculation of the retail margin, because Southern essentially argues that the allowance for the return on fixed assets and working capital financing rate should be based on the allowed return on equity or WACC allowance.[1028] Ofwat submitted that given the RMA and retail margin share constituent parts, it will be important for the CMA's final determination to ensure that changes to components are appropriately reflected in both figures.[1029]

7.1069 Ofwat also noted that the retail control is different in character to the wholesale controls. It said that the retail business activities are essentially customer service and billing, implying a different type of capital requirement that is much more short-term than needed to finance long-lived infrastructure assets and that applying a working capital financing rate based on the sector WACC with a long-run (10- to 20-year horizon) overstated the true working capital financing rate relevant to household retail.[1030]

[1023] Southern SoC, p456, paragraph 280.
[1024] KPMG (2025) Estimating the Cost of Capital for PR24, paragraph 8.2.2.
[1025] Anglian (2025) Response to CMA PR24 PD, paragraph 574.
[1026] Southern (2025) Response to CMA PR24 PD, paragraph 7.91.
[1027] Southern (2025) Response to CMA PR24 PD, paragraph 7.91, Anglian (2025) Response to CMA PR24 PD, paragraph 575–576.
[1028] Ofwat (2025) Response to common issues on risk and return, paragraph 6.12.
[1029] Ofwat (2025) Response to CMA PR24 PD: Allowed Return, Risk and Return, paragraph 7.11
[1030] Ofwat (2025) Response to common issues on risk and return, paragraph 6.14.

7.1070 Ofwat disagreed with Southern that the retail margin is an economically significant contributor to Appointee gearing. Ofwat stated that of the three components (of the retail margin) the return on fixed assets is the sector WACC (and so aligns with notional gearing), working capital debt is short term and matched with a short-term cash receivable (bill payments), and systematic risk compensation is analogous to a return on equity.[1031]

7.1071 Ofwat stated that Southern misunderstood the lack of inclusion of DPC and SIPR assets in fixed assets within the retail margin. Ofwat explained that retail fixed assets are those capital assets linked to household retail activities (ie billing and customer service) and these activities do not sit within DPC/SIPR projects, whose unitary charge is recovered by the Appointee from its customer base. Ofwat concluded that there are therefore no additional fixed assets from DPC/SIPR activities not accounted for in this line item.[1032]

7.1072 Ofwat recognised that the compensation for systematic risk in the retail margin and RMA is not estimated with precision. Ofwat stated that this is a reflection of the lack of pure-play listed household retail companies to provide estimates of beta, and the lack of representations from companies on the issue over the course of the PR24 process, which Ofwat stated suggests it was not significant.[1033]

7.1073 In response to our provisional decision to remove the RMA, CEPA, Ofwat's adviser, stated that the WACC was not a suitable rate of return for renumerating retail capital, for the following reasons:[1034]

(a) where companies raise finance specifically for the purpose of managing working capital it is generally short-term in nature – for example, revolving credit or overdraft facilities with banks. This gives it different characteristics to the long-term bond debt that Ofwat and the CMA use as benchmarks for estimating the WACC;

(b) directly relevant, company-provided evidence on working capital costs received by Ofwat as part of business plans indicates that the nominal costs are lower than the nominal WACC;

(c) the risk exposure around working capital is lower than that around the regulated asset base and there is little if any risk around recovery beyond the current financial year. CEPA noted that this suggests that an efficient business would see little need to supplement debt finance for working capital with equity finance; and

[1031] Ofwat (2025) Response to common issues on risk and return, paragraph 6.15.
[1032] Ofwat (2025) Response to common issues on risk and return, paragraph 6.16.
[1033] Ofwat (2025) Response to common issues on risk and return, paragraph 6.19.
[1034] CEPA (2025) Retail Margin Adjustment: response to provisional determinations, p2

(d) the CMA in its liquidity allowance recognises that short-term financing needs are dealt with via RCFs and liquidity facilities, rather than necessarily being financed at the cost of equity.

Third parties

7.1074 MCC Economics, on behalf of CCW, included a 6bps RMA in its cost of capital calculations but did not include any comments on Ofwat's methodology.[1035]

Our assessment and decisions

7.1075 We consider the arguments raised by Ofwat and the Disputing Companies to inform our view on the RMA.

Retail margin

7.1076 We note in chapter 3 (Approach and prioritisation) that in line with the CMA PR24 Approach document, we have deprioritised updating the residential retail allowances.[1036] We have therefore decided not to review the level of the retail margin.

7.1077 We note Ofwat's PD response which stated that the RMA and retail margin share constituent parts. However, we understand that Ofwat placed weight on both the bottom-up calculation of the retail margin but also top-down cross-checks and formed a judgement on the appropriate level in the round. We therefore conclude that it is not necessary to mechanistically update the retail margin calculation for changes in our approach to the RMA. In other words, we treat the retail margin of 1.5% as fixed, recognising that Ofwat's decision involved judgement and weighing up different evidence, which we have not reviewed in detail.

7.1078 We also note Northumbrian's submissions on rounding the retail margin to two decimal places. We consider that it would be spurious accuracy not to round the retail margin to one decimal point.

7.1079 We therefore retain Ofwat's retail margin of 1.5% in the financial model.

Retail margin adjustment

7.1080 Our starting point is that total allowed returns to the Appointee business should not increase just because the regulator sets two separate price controls rather than one. To the extent that separation has had any impact on risk, this is reflected in

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[1035] MCC Economics (2025) A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW, Table 1, p4.
[1036] CMA PR24 Approach document, paragraph 93.

our Appointee beta estimates, and the total returns to the Appointee business should reflect the Appointee WACC.

7.1081 We also consider that a ROCE approach is appropriate to assess the level of returns for both wholesale and retail businesses. Put differently, the total return across both controls should equal to the Appointee WACC multiplied by the total capital base.

7.1082 In theory, separate units of an integrated business may have different levels of systematic risk. If they were operated as stand-alone businesses, they would in practice finance themselves with a different mix of debt and equity, at a cost and in proportions which reflect the stand-alone business risk of each unit. However, the reality is that water companies continue to raise finance at the integrated Appointee level, and therefore, customer bills should reflect returns commensurate with the integrated Appointee WACC.

7.1083 The evidence we use to estimate the Appointee WACC is consistent with this premise. We use data on Appointee level equity betas and Appointee level gearing to estimate the underlying operating risk of the notional company (asset beta). Similarly on the debt side, while we mainly focus on long-term debt financing, any costs of short-term financing are implicitly accounted for (through an appropriate allowance for liquidity).

7.1084 This context is important for considering the detailed arguments raised on the RMA.

Retail systematic risk

7.1085 Ofwat's application of the RMA, which has the effect of reducing the wholesale WACC below the Appointee WACC, implies that the systematic risk of retail activities is higher than that of wholesale activities and therefore the beta for an integrated water company is higher than that of a hypothetical water company which only operates wholesale activities.

7.1086 Ofwat has not provided evidence that this is the case, but if this assumption holds true (and assuming the retail margin is consistent with this level of retail systematic risk) then conceptually a separate wholesale WACC could be estimated, to ensure it reflects the wholesale systematic risk only.

7.1087 However, it is not clear that the systematic risk of the retail business is higher than that of the wholesale business or that it can be reliably estimated. If the household retail market operated under competition (as with the water business retail market or energy retail market) then the level of systematic risk may be higher than that of the wholesale business. However, at present household retail activities are not subject to competition and are vertically integrated within the wholesale business.

Given this, we do not see compelling evidence to assume that the systematic risk of the retail business is higher than the wholesale business.

Financing costs of the retail business

7.1088 Ofwat's methodology for estimating the level of the RMA also depends on the assumed financing costs for retail working capital and retail fixed assets, as set out in Table 7.30 below. Ofwat assumed that retail fixed assets are financed at its Appointee nominal WACC (of 6.1%), whereas the retail working capital is financed at a lower working capital financing rate (of 4.65%, derived from PR24 company business plan data). In this table we also set out an alternative methodology which finances the costs for working capital and retail fixed assets using our Appointee nominal WACC, in line with our earlier observation that applying the Appointee WACC to all assets is consistent with how the integrated business is financed.

Table 7.30 : Ofwat PR24 FD and illustrative alternative methodology for calculation of the RMA

£m	Calculation	Ofwat PR24 FD[1037]	Alternate methodology (cost of financing CMA WACC)
Fixed asset balance for retail controls	A	318.0	318.0
Cost of financing fixed assets	B	6.10%	6.70%
Required revenue for return on retail fixed assets	**C = (A x B)**	**19.4**	21.3
Debtor balance	D	2,078.0	2,078.0
Creditor balance	E	99.0	99.0
Measured Income Accrual	F	2,062.0	2,062.0
Advance receipts	G	1,459.0	1,459.0
Annual working capital requirement	H = (D + F) - (E + G)	2,582.0	2,582.0
Working capital financing rate	I	4.65%	6.70%
Required revenue for return on working capital	**J = H x I**	**120.1**	173.0
Total retail-specific capital costs	**K = C + J**	**139.5**	194.3
Retail margin allowed revenue apportioned to households.	L	212.0	212.0
Required return for retail systematic risk	M = L - K	72.5	17.7
Average RCV (2020-25)	N	121,790.0	121,790.0
Retail margin adjustment	**O = M / N**	**0.06%**	0.015%

Source: Ofwat PR24 FD and CMA analysis

7.1089   We note that compared to the analysis in the PR19 Final Report, where the majority of companies had negative or low working capital requirements, retail working capital requirements are assumed to be significant for AMP8 and account for most of the retail asset base.[1038] The increase in working capital balances makes the financing rate applied to these balances more significant.[1039]

7.1090   We acknowledge the points raised by CEPA and Ofwat that a stand-alone retail business would not typically raise long-term debt and would instead rely on short-term financing for some of its working capital needs. In a similar vein, we can see some merit in the Disputing Companies' view that a stand-alone retail business is likely to have more equity finance in its financing mix than the wholesale business.

[1037] We set out Ofwat's calculations as per Table 30 of its Ofwat (2025) PR24 final determinations: Aligning risk and return - allowed return appendix, p126. We note that Wessex and Northumbrian submitted that there was an unambiguous error in the RMA, and that it should be 0.055% rather than 0.06%. Ofwat agreed with this and noted that it would adjust for the difference in its PR24 reconciliations at PR29. Ofwat, PR24 Final Determination Inbound query, Ref OFW-FD-NES-016.

[1038] In line with not revisiting the retail price controls, we have not assessed the efficiency of the assumed working capital practices.

[1039] Effectively, the CMA did not need to reach a decision on the appropriate financing rate for working capital in the CMA PR19 Final Report.

However, this is not how water companies run their businesses in practice. Given the uncertainty around the underlying financing costs of a stand-alone retail business and the reality of all financing being raised at the Appointee level, we consider that the ROCE cross-check applying a single Appointee WACC to all assets is a more robust way to assess the need for an RMA. If the nominal Appointee WACC is used, then the RMA reduces to 1.5bps.[1040]

Conclusion

7.1091 We consider it appropriate to estimate the RMA using the Appointee WACC. The very small estimate of the RMA, using our preferred methodology set out in Table 7.30 (which is not materially different to zero), therefore suggests Ofwat's 1.5% allowance for the retail margin correctly remunerates the retail business for the required return on its capital employed and further adjustment is not required.

7.1092 We note that Ofwat and CEPA proposed alternative approaches for estimating the retail margin and the RMA in response to our PD. We consider this is an area which Ofwat could more clearly set out its approach and assumptions in estimating the bottom-up retail margin and the RMA in future price controls.

7.1093 We remove the RMA adjustment and equal the wholesale WACC to the Appointee WACC.

Overall allowed return

7.1094 Our final decision is to use an Appointee cost of equity point estimate 30bps above the middle of our 5.02% to 5.76% Appointee cost of equity range (ie 5.39%), which results in a point estimate of 5.70%[1041] (CPIH-real).

7.1095 For the cost of debt, we estimate a cost of embedded debt allowance of 2.38%, a cost of new debt allowance of 3.78% and an additional borrowing cost allowance of 0.20%. We assume a 28% average proportion of new debt over the price control. Taken together, these factors amount to a cost of debt allowance of 2.97%.

7.1096 At our assumed 55% notional level of gearing, our cost of equity and cost of debt allowances lead to an overall Appointee and wholesale WACC of 4.20%. This wholesale cost of capital allowance is 0.23% higher than Ofwat's PR24 FD allowance of 3.97%.

[1040] Although it is an assumption that the retail business is financed at the same cost of capital at the wholesale business, we note that the resulting RMA is relatively insensitive to the WACC assumed. For example, a nominal WACC between 6.5% and 7.3% would result in an RMA between 0 and 2bps.
[1041] Rounded to one decimal place.

Table 7.31 : CMA's WACC estimates compared to Ofwat's PR24

			CMA final determination		
CPIH-real	Ofwat PR24 FD	CMA provisional determination	CMA low	CMA high	CMA point estimate
Notional gearing	55.00%	55.00%	55.00%	55.00%	55.00%
RFR	1.52%	2.49%	2.40%	2.40%	2.40%
TMR	6.83%	7.00%	6.70%	7.20%	6.95%
ERP	5.31%	4.51%	4.30%	4.80%	4.55%
Unlevered beta	0.28	0.31	0.276	0.314	0.295
Debt beta	0.10	0.10	0.150	0.050	0.100
Listed comparator gearing	52.3%	53.8%	53.94%	56.53%	55.24%
Asset beta	0.33	0.36	0.36	0.34	0.35
Re-levered equity beta	0.62	0.68	0.61	0.70	0.66
Cost of equity	**4.83%**	**5.60%**	**5.02%**	**5.76%**	**5.39%**
Aiming up	0.28%	0.30%			0.30%
Cost of equity Appointee	**5.10%**	**5.90%**	**5.02%**	**5.76%**	**5.70%**
Cost of embedded debt	2.77%	2.38%	2.38%	2.38%	2.38%
Cost of new debt	3.74%	3.86%	3.78%	3.78%	3.78%
Share of new debt	24%	27%	28.00%	28.00%	28.00%
Additional borrowing costs	0.15%	0.20%	0.20%	0.20%	0.20%
Cost of debt	**3.15%**	**2.98%**	**2.97%**	**2.97%**	**2.97%**
Appointee WACC	**4.03%**	**4.29%**	**3.89%**	**4.23%**	**4.20%**
Retail margin adjustment	(0.06%)	-	-	-	-
Wholesale WACC	**3.97%**	**4.29%**	**3.89%**	**4.23%**	**4.20%**

Source: CMA analysis and Ofwat PR24 FD. Note: totals in the table above do not always reconcile due to rounding. The cost of equity point estimate is rounded to 1 decimal point.